

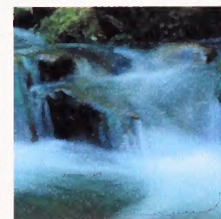
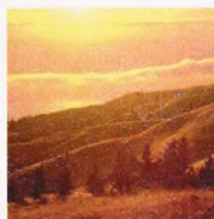
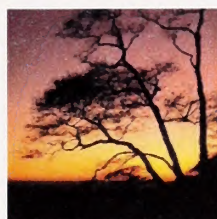
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KING RANGE NATIONAL CONSERVATION AREA

Draft Resource Management Plan
and Draft Environmental Impact Statement



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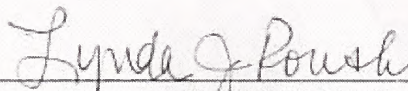
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King Range National Conservation Area Draft Resource Management Plan & Environmental Impact Statement

Prepared by:

Arcata Field Office
January 2004

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EXECUTIVE SUMMARY



EXECUTIVE SUMMARY

INTRODUCTION

The Bureau of Land Management (BLM) has prepared this Draft Resource Management Plan (RMP) and Environmental Impact Statement (EIS) to provide direction for managing public lands within the King Range National Conservation Area (KRNCA) planning area and to analyze the environmental effects resulting from implementing the alternatives addressed in this Draft RMP/EIS. Following public review and comment, we will publish a Final EIS followed by a Record of Decision (ROD) that identifies the any changes resulting from public comments on the draft and the final alternative components selected as the RMP. We will then publish a stand-alone RMP consisting of Chapters 1, 2, and 5, selected components of Chapter 3, and appropriate appendices.

The KRNCA includes approximately 58,000 acres of public and 6,000 acres of private lands, located along the rugged northern California coast about sixty miles south of Eureka and 200 miles north of San Francisco. An abrupt wall of mountains thrusts 4,000 feet above the Pacific, making the area one of the most spectacular and remote stretches of coastline in the continental U.S. The elemental beauty and ever-changing mood of the Pacific Ocean meeting the wild, undeveloped coastline, old-growth forests and rugged peaks of the King Range inspired the original NCA designation, and continues to draw people from all over the world to visit the Lost Coast of California. Visitors pursue a wide variety of activities, including hiking and backpacking eighty miles of trails, camping, beach-combing, surfing, hunting, and vehicular touring and sight-seeing on a 100+ mile network of BLM and county-maintained roads, environmental education, and wildlife viewing. Additional uses involve special forest products collection (mostly wild mushrooms) and livestock grazing by several local ranchers.

The formal plan decision area encompasses lands within the Congressionally-designated KRNCA, as well as BLM-managed lands contiguous to the KRNCA and two non-contiguous BLM parcels: one is the site of the KRNCA Project Office/Visitor Center, and the other, the Honeydew Creek Campground (see Figure 1-1). The total planning area includes approximately 69,000 acres. Formal decisions in the plan will only apply to these lands. However, a planning “area of influence” also includes the surrounding region stretching from McNutt Gulch near Petrolia in the north to Whale Gulch in the south, including the Mattole River Watershed. The plan recognizes that these nearby lands, communities, resource values, and uses are all affected by management of the KRNCA, and their use/values in turn affect management of the KRNCA.

PROPOSED ACTION

For this EIS, the proposed federal action is the adoption and implementation of an updated RMP for the King Range NCA, to serve as a comprehensive blueprint for its future use and management over the next twenty years. The RMP is being prepared using BLM’s planning regulations and guidance issued under the authority of the Federal Land Policy and Management Act (FLPMA) of 1976. The EIS is incorporated as part of this document to assess the environmental consequences associated with various alternative management scenarios. It is also included to meet the requirements of the National Environmental Policy Act of 1969 (NEPA), Council on Environmental Quality regulations for

implementing NEPA (40 Code of Federal Regulations 1500-1508), and requirements of BLM's NEPA Handbook, H-1790-1.

PURPOSE OF AND NEED FOR THE KING RANGE RMP

The purpose of this RMP is to evaluate the original 1974 King Range Management Program and reaffirm and reestablish guidance, objectives, policies, and management actions for the KRNCA that reflect current issues, knowledge, and conditions. This planning effort is comprehensive in nature, evaluating existing management plans and resolving or addressing issues within the KRNCA identified through agency, interagency, and public scoping efforts. This effort also identifies the area's mission, long-range management goals, intermediate objectives, and actions and options to meet those objectives. Several additions and adjustments to the original Management Program have occurred since 1974 as environmental conditions, public needs, and management issues and strategies have changed: Rule making has been implemented through publication in the *Federal Register*; activity-level plans have been developed and implemented; and the Northwest Forest Plan (April 1994) amended all public land use management plans in the Pacific Northwest, including the King Range Management Program. An additional plan amendment was made in 1998 to change management of Black Sands Beach to non-motorized use only.

This RMP analyzes the current management situation and identifies desired future conditions to be maintained or achieved, management actions necessary to achieve specific objectives, and a schedule and cost estimate for implementing the actions necessary to achieve stated goals. It addresses and integrates all existing management plans and programs, including but not limited to: fire management; livestock grazing; threatened and endangered species; recreation and visitor services; watershed management; and transportation. The plan also meets the stated requirements of the 1970 King Range Act.

MISSION AND VISION STATEMENTS

The following mission and vision statements were developed based on the direction, intent, and spirit of the legislation and policies establishing management of the area, the KRNCA's role as a component of the BLM's National Landscape Conservation System, and input from the public during the scoping process for the plan:

Mission Statement:

"The BLM will manage the King Range National Conservation Area to conserve one of America's last wild and undeveloped coastal landscapes for the use and enjoyment of present and future generations."

As part of this larger mission, the BLM will:

- Provide recreation opportunities that complement the rugged primitive character that makes the area distinctive as California's Lost Coast.
- Provide for use of natural resources in a sustainable manner.

- Protect and enhance wildlife habitat with an emphasis on species dependent on old-growth forests.
- Provide healthy watersheds for aquatic species with emphasis on anadromous fisheries restoration.
- Respect community values and seek opportunities for local involvement in area conservation and use.

PLANNING PROCESS AND PUBLIC COLLABORATION

The planning process for this Draft RMP opened with publication of the Notice of Intent in the *Federal Register* on October 11, 2002 (volume 67, no. 198). Media announcements and a planning update mailer requested public input and announced public scoping open houses, held in five cities during November 2002. The formal scoping period ended December 31, 2002, although additional comments were accepted after that date to accommodate mail and e-mail delays from a severe winter storm. A total of over 1,200 comments were compiled from the meetings and the 105 written submissions received by the deadline. These comments were recorded and categorized according to both source and topic, and were then reviewed and assessed in a scoping report published by the BLM in February 2003.

The clearest message from people who submitted comments during the scoping process was that they value the King Range for its primitive character—it represents a unique opportunity to experience the California coastline in a relatively undeveloped and natural state. This priority forms the core of this plan's vision for the future of the KRNCA, and relates to all other activities and management issues. The key planning themes identified by the public during this process fell into seven broad areas: (1) the area's primitive character and values; (2) recreation use; (3) transportation and access; (4) education and interpretation; (5) community support and involvement; (6) resource conservation and management; and (7) fire management.

In accordance with the Wild and Scenic Rivers Act (16 USC 1271-1287), a Wild and Scenic Rivers eligibility and suitability study was conducted and integrated into the Draft RMP (Appendix C). This study provides background information and compiled resource data regarding the eligibility, classification, and suitability or unsuitability of planning area river segments for potential inclusion in the National Wild and Scenic Rivers System.

MANAGEMENT ALTERNATIVES

The basic goal of developing alternatives is to explore the range of use options, protection preferences, and management tools to find the optimal balance for the King Range NCA. Alternatives must meet the project purpose and need; must be reasonable (i.e., implementable); must provide a mix of resource protection, management use, and development; must be responsive to the planning themes; must meet established planning criteria (Chapter 1); and must meet federal laws, regulations, and BLM planning policy.

Four alternatives were developed and carried forward for detailed analysis in the Draft RMP/EIS. Alternative A, continuation of current management as the “no action” alternative, was developed using available inventory data, existing planning decisions and policies, and existing land use allocations and programs. Alternatives B, C, and D were developed with input from public scoping and collaborative work among the BLM interdisciplinary planning team to represent a range of approaches to balancing use and protection of the King Range’s primitive character. The prevailing vision for the future of the KRNCA involves maintaining its unique opportunity to experience the California coastline in a relatively undeveloped and natural state, which allows only a moderate continuum of management options. Within that range, however, the alternatives represent different strategies for accomplishing that vision.

Alternative B represents the most “hands off” approach, emphasizing the utilization of natural processes wherever possible and minimizing human impacts. This would result in low levels of on-the-ground resource management, and limited recreation use focused on providing maximum opportunities for solitude and wilderness-type experiences. In the middle of the spectrum, Alternative C would provide a greater diversity of uses and approaches to management, with a broad mix of tools and moderate levels of use allowed. Alternative D would take an active approach, allowing maximum recreation use while still maintaining and enhancing resource conditions. It includes the widest application of management tools and actions, and provides higher levels of recreation use with fewer opportunities for solitude than the other alternatives. Table ES-1 at the end of this section provides a summary of the key aspects of each alternative as well as their differences.

PREFERRED ALTERNATIVE

The Preferred Alternative was selected by the Arcata Field Manager and interdisciplinary team members after determining the most ideal approach to each resource from the full range of options, seeking the optimal combination of flexibility and balance in managing both resources and uses of the King Range. Issues considered during this selection process include: environmental impacts of the alternatives; issues raised throughout the planning process; specific environmental values, resources, and resource uses; conflict resolution; public input; and laws and regulations.

The Preferred Alternative, in summary, includes the following combination of approaches for each resource:

- Visual Resources Management: Alternative C
- Cultural and Historic Resources: Alternative D
- Lands and Realty: Alternative C
- Wilderness Characteristics: Alternative D
- Wild and Scenic Rivers: Alternative D
- Areas of Critical Environmental Concern: Alternative C
- Aquatic Ecosystems and Fisheries: Alternative C
- Wildlife Management: Alternative C

- Terrestrial/Vegetative Ecosystems: Alternative C
- Forest Management: Alternative D
- Special Forest Products: Alternative C
- Grazing Management: Alternative C
- Fire Management: Alternative C
- Transportation and Access: Alternative C
- Recreation: Alternative C
- Interpretation and Education: Alternative A

This combination focuses on the use of mostly moderate, sometimes targeted management actions for most resources and management programs in the King Range. It would also provide moderate levels of recreation use, with some new controls added to assure that neither resources nor recreation experiences suffer through overuse, while at the same time avoiding excessive restrictions. A few resources, such as Cultural Resources and Forest Management, would benefit from taking a more active restoration and management approach; for Cultural Resources, this would result in greater knowledge about historic and prehistoric resources within the King Range, as well as more specific protections for identified sites, while the greater variety of tools available in Alternative D for Forest Management would contribute to “speeding up” ecological recovery of previously cut-over lands. The KRNCA has an extensive and collaboration-based Interpretation and Education program already in place, which would be continued as described in Alternative A.

ENVIRONMENTAL CONSEQUENCES

The management alternatives were specifically configured to maximize benefits and minimize adverse effects on both ecosystem function and the human environment. However, because the BLM is not considering the alternatives as stand-alone scenarios, effects from different management actions under all alternatives were analyzed by individual resources. Detailed descriptions of the direct and indirect impacts of resource management under all four alternatives for each resource area are provided in Chapter 4, along with a discussion of the possible cumulative impacts that could result from actions taken in this RMP. The changes likely to result from the alternatives are generally subtle in nature, with mostly minor or negligible impacts.

CONSULTATION AND COORDINATION

As discussed above, the BLM implemented an extensive public participation process to solicit and address public input, including formal public scoping meetings and a scoping report summarizing public input. As part of this process, the BLM also met with the Shelter Cove Property Owners Association, the Garberville Rotary Club, and the Garberville Chamber of Commerce. Interagency meetings and consultations were held with the California Coastal Commission, National Marine Fisheries Service, U.S. Fish and Wildlife Service, and the State Historic Preservation Officer. Additionally, the BLM consulted and coordinated with federal, state, county, and local government elected officials and representatives, as

well as the Bear River Band of Rohnerville Rancheria. Communication is ongoing and will continue through the implementation of the plan. Chapter 5 provides a discussion of coordination and consultation.

Table ES-1: Summary of Alternatives

ALTERNATIVE A		ALTERNATIVE B		ALTERNATIVE C		ALTERNATIVE D	
THEME OF ALTERNATIVE	No Action – Continue Current Management	Lower Resource Use And Management , Emphasize Natural Processes	Moderate Resource Use And Management , Augment Natural Processes	Active Resource Use And Management , Actively Enhance Natural Processes			
GENERAL OBJECTIVE OF ALTERNATIVE	Maintain current level of multiple uses and resource management in accordance with existing guidance, laws, plans, and policies, and that comply with the King Range National Conservation Area Act (“the Act”), while meeting land health standards.	Comply with the Act. Resolve issues and concerns with a focus on utilizing natural processes and minimizing human impacts where possible. Lands will be managed with a “hands off” approach for maximum opportunities for solitude and wilderness-type experience.	Comply with the Act. Resolve issues and concerns to provide a greater diversity of uses and an opportunistic approach to management. A mix of tools will be implemented, and a moderate level of use allowed, with moderate opportunities for solitude.	Comply with the Act. Resolve issues and concerns with a focus on active intervention and maximum use while maintaining and enhancing resource conditions. This alternative includes the greatest application of management tools and actions, and provides for fewer opportunities for solitude.			
	RESOURCE OR RESOURCE USE						
	VISUAL RESOURCE MANAGEMENT						
	Western Coastal Slope/beaches: Class II Remainder of KRNCA (Uplands): Class III Shelter Cove: No Class Identified Complete visual contrast ratings for all proposed surface disturbing projects to ensure that they meet VRM Class Objectives. Complete visual contrast ratings for existing roads and facilities and identify opportunities to reduce existing visual impacts	Backcountry Zone: Class I Frontcountry Zone: Class III Residential Zone: Class IV Same as Alternative A. Same as Alternative A.	Same as Alternative B, except portion of Backcountry Zone north of Cooskie Creek will be managed as VRM Class II. Same as Alternative A. Same as Alternative A.	Backcountry Zone: Class II Frontcountry Zone: Class III Residential Zone: Class IV Same as Alternative A. Same as Alternative A.			

Table ES-1: Summary of Alternatives

ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C	ALTERNATIVE D
through modifications (e. g. painting culverts, removing road berms etc.).			
Complete an inventory of existing and potential key scenic vista points along road and trail corridors within the KRNCA and identify opportunities to enhance these locations so that they are available to the public.	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.
Ensure that coastal developments do not detract from the scenic integrity of the area by working with Humboldt County, the California Coastal Commission and other agencies with management jurisdiction.	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.
BLM managed lands in Shelter Cove provide the primary public open space in the Residential Zone. Any new site developments on public lands will be located and designed so that they do not detract from the coastal vistas. New facilities will be constructed away from the coastal bluff viewshed.	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.

Table ES-1: Summary of Alternatives

		ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C	ALTERNATIVE D
CULTURAL AND HISTORIC RESOURCES					
	Preserve, protect, and study cultural resources through outreach, educational, and interpretive efforts; and to reduce imminent threats from natural or human-caused deterioration or potential conflict with other resource uses.	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.
	Priority for protection placed on cultural resources in the Backcountry and Residential Zones.	Same as Alternative A.	Same as Alternative A.	Priority for protection placed on cultural resources in all three Zones.	Same as Alternative C.
	Monitoring, site patrols, and collaboration with local Native American Tribes and individuals remain at current levels.	Same as Alternative A.	Same as Alternative A.	Increased monitoring, site patrols, and collaboration with local Native American Tribes and individuals.	Same as Alternative C.
					Take a proactive approach to surveying the Frontcountry Zone for cultural resources.
					Conduct a Regional Overview for the entire King Range and surrounding areas.
					Develop stabilization projects for historic properties.
					Develop National Register nominations for King Range Historic and Prehistoric Archeological Districts.

Table ES-1: Summary of Alternatives

LANDS AND REALTY				
	ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C	ALTERNATIVE D
Land Acquisition	Acquire lands and interests in lands from willing sellers to improve fragmentation, and/or enhance management in accordance with the King Range Act.	Acquire lands and interests in lands from willing sellers to reduce fragmentation, and/or enhance management in the Backcountry and Frontcountry Zones. In the Residential Zone and outside the KRNCA boundary, only acquire lands and interests in lands that have been proposed by the affected local governments.	In the Backcountry and Frontcountry Zones, acquire lands and interests in lands from willing sellers to reduce fragmentation, and/or enhance management. In the Residential Zone and outside the KRNCA boundary, BLM will acquire lands only after working with affected local governments and community associations.	Same as Alternative C.
Rights-of-Way	Rights-of-way and/or permits will be considered on a case-by-case basis.	Same as Alternative C.	Make Backcountry Zone an exclusion area for new rights-of-way and/or permits; rights-of-way and permits will be considered in Frontcountry and Residential Zones on a case-by-case basis. Utility rights-of-way will be restricted as much as possible to existing and/or underground locations.	Rights-of-way and/or permits will be considered on a case-by-case basis, including but not limited to utility corridors, roads, water facilities, and communication sites.
Water Rights-of-Way	Continue to consider water rights-of-way applications on a case-by-case basis.	No new rights-of-way will be granted for diversion of surface water or appropriation of ground water.	New water rights-of-way that propose to divert surface water on public lands will be considered on a case-by-case basis and in all cases stipulate that surface water can only be diverted on public lands during the winter and spring months, when base flows are adequate.	New proposals to divert water will be considered on a case-by-case basis after the proponent has acquired a legal water right. The BLM would require the applicant to evaluate the potential effects to public land resources, and to meet standard stipulations.

Table ES-1: Summary of Alternatives

	ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C	ALTERNATIVE D
Water Rights	The BLM will not seek additional water rights.	BLM will apply for water rights in watersheds that appear likely to become fully allocated by the State Water Resources Control Board. Similarly, BLM will assert the water rights necessary to protect resource values on public lands within watersheds that are adjudicated in the future.	BLM will apply for water rights only after completing an inventory and assessing surface water sources within the KRNCA and adjacent public lands.	Same as Alternative C.
INVENTORY UNITS & STUDY AREAS—WILDERNESS CHARACTERISTICS				
	Manage the 37,975 acres of existing WSAs identified in the 1988 Wilderness EIS under the BLM's "Interim Management Policy (IMP) For Lands Under Wilderness Review" (H-8550-1) until Congressional designation as Wilderness or release from WSA status.	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.
	No Wilderness Characteristic Inventory Units would be identified.	Protect Wilderness Characteristics on five parcels (approximately 200 acres) within the King Range WSA that have been acquired since the Wilderness EIS was published in 1988. Protect wilderness characteristics on 10,260 acres adjacent to the existing King Range and Chimise Mountain WSAs.	Protect Wilderness Characteristics on five parcels (approximately 200 acres) within the King Range WSA that have been acquired since the Wilderness EIS was published in 1988. Protect wilderness characteristics on 6,721 acres adjacent to the existing King Range and Chimise Mountain WSAs.	Protect Wilderness Characteristics on five parcels (approximately 200 acres) within the King Range WSA that have been acquired since the Wilderness EIS was published in 1988.

Table ES-1: Summary of Alternatives

INVENTORY UNITS & STUDY AREAS—WILD AND SCENIC RIVERS				
ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C	ALTERNATIVE D	
Do not recommend any river segments for inclusion into the National Wild and Scenic River System (NWSRS).	Recommend all 28 eligible river segments as suitable for inclusion in the NWSRS. The BLM would place all suitable river segments under protective management until a final decision is made by Congress.	Recommend fifteen eligible river segments as suitable for inclusion in the NWSRS: South Fork Bear Creek (Segments A and B), Big Creek, Big Flat Creek, Buck Creek, Gitchell Creek, Honeydew Creek, Horse Mountain Creek, Kinsey Creek, Mattole River, Mill Creek, Oat Creek, Randall Creek, Shipman Creek, and Spanish Creek. The BLM would place all suitable river segments under protective management until a final decision is made by Congress.	Recommend eight eligible river segments on seven different streams as suitable for inclusion in the NWSRS: South Fork Bear Creek (Segments A and B), Big Creek, Big Flat Creek, Honeydew Creek, Gitchell Creek, Mattole River, and Mill Creek. The BLM would place all suitable river segments under protective management until a final decision is made by Congress.	
	The mouth of the Mattole River and estuary would receive preliminary classifications as a scenic river area, as well as Mill Creek and South Fork Bear Creek north of Shelter Cove Road. The remaining portion of South Fork Bear Creek, south of Shelter Cove Road, would be preliminarily classified as a recreational river area; the remainder of the eligible streams in the King Range would all receive preliminary classification as wild river areas.	Preliminary classifications for all river segments would be the same as Alternative B.	Preliminary classifications for all river segments would be the same as Alternatives B.	

Table ES-1: Summary of Alternatives

INVENTORY UNITS & STUDY AREAS —ACECs		ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C	ALTERNATIVE D
		Continue management of the 655 Acre Mattole Estuary ACEC. No additional ACEC designations.	Same as Alternative A.	Same as Alternative A. Designate the Mill Creek Watershed as an ACEC, including all BLM managed lands within the Mill Creek Watershed.	Same as Alternative A. Same as Alternative C.
AQUATIC ECOSYSTEMS AND FISHERIES					
		Restore and maintain the ecological health of watersheds and aquatic ecosystems on public lands, and, to the extent possible, partner with other landowners to coordinate restoration efforts across watersheds.	Restore and maintain the ecological health of watersheds and aquatic ecosystems on public lands, and, to the extent possible, partner with other landowners to coordinate restoration efforts across watersheds, with new standards and guidelines included in the plan.	Same as Alternative B.	Same as Alternative B.
		Implement up-slope sediment reduction, in-stream habitat enhancement, riparian silviculture, and monitoring measures only in fish-bearing streams within the Mattole Basin.	Implement up-slope sediment reduction measures only in fish-bearing streams within the Mattole Basin. Do not implement in-stream habitat enhancement, riparian silviculture, and monitoring measures.	Implement up-slope sediment reduction, in-stream habitat enhancement, riparian silviculture, research, and monitoring measures only in fish-bearing streams within the Mattole Basin.	Implement up-slope sediment reduction, in-stream habitat enhancement, riparian silviculture, research, and monitoring measures KRNCA-wide.
		Implement estuary enhancement program in the Mattole Estuary, in coordination with local watershed restoration groups.	Do not implement estuary enhancement program.	Same as Alternative A.	Same as Alternative A.
		Work with federal, state, and local	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.

Table ES-1: Summary of Alternatives

	ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C	ALTERNATIVE D
	partners to minimize or eliminate the need for additional listing of species under the ESA and to contribute to the recovery of listed species in the King Range.			
WILDLIFE				
Cooperative Management	Cooperative management with the CDFG and FWS to achieve, maintain and enhance natural wildlife populations, protect habitat, prevent damage, and increase public education.	Same as Alternative A.	Cooperative management with the CDFG and FWS to achieve, maintain and enhance natural wildlife populations, protect habitat, prevent damage, and increase public education; also facilitate research and monitoring to increase the knowledge base.	Same as Alternative C.
Threatened and Endangered Species	Work with federal, state and local partners to minimize or eliminate the need for additional listing of species under the ESA and to contribute to the recovery of listed species in the King Range. Initiate Consultation with appropriate agencies if new T&E species colonize area.	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.
	Encourage habitat for bald eagles.		Protect roost sites for brown pelicans through cooperative management with the Coastal Monument.	Protect roost sites for brown pelicans through cooperative management with the Coastal Monument.
	Monitor for nesting western snowy plovers.	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.
		Encourage habitat for western snowy plovers if they colonize the Mattole River mouth.	Provide suitable habitat for western snowy plovers if they colonize Mattole River mouth.	Same as Alternative C.

Table ES-1: Summary of Alternatives

	ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C	ALTERNATIVE D
	Preserve potential nesting habitat for marbled murrelets, and conduct project-level protocol surveys in appropriate habitat prior to project implementation. Protect and increase suitable habitat for nesting and roosting of northern spotted owl; maintain 12-14 pairs within the KRNCA. Monitor known owl sites and conduct periodic surveys in suitable habitat.	Same as Alternative A. Protect suitable habitat for nesting and roosting of northern spotted owl; maintain 12-14 pairs within the KRNCA. Monitor known owl sites. No periodic surveys.	Same as Alternative A. Protect and increase suitable habitat for nesting and roosting of northern spotted owl, with sufficient habitat to attract and maintain 20 breeding pairs within the KRNCA. Monitor known owl sites and conduct periodic surveys in suitable habitat. Protect haul-out sites for Steller's sea lions through cooperative management with the Coastal Monument, and educate boaters on appropriate conduct.	Preserve potential nesting habitat for marbled murrelets, and conduct project-level protocol surveys in unsurveyed, potential suitable habitat. Protect and increase suitable habitat for nesting and roosting of northern spotted owl, with sufficient habitat to attract and maintain 20 breeding pairs within the KRNCA. Monitor known owl sites and conduct periodic surveys in suitable habitat. Protect haul-out sites for Steller's sea lions through cooperative management with the Coastal Monument, and educate boaters on appropriate conduct.
Other Wildlife	Disturbance of special-status amphibians and reptiles will be avoided to the extent practicable. Work cooperatively with CDFG to maintain a natural diversity of intertidal organisms.	Same as Alternative A. Same as Alternative A.	Design management actions to minimize disturbance to nesting species of migratory birds. Design a long-term "all bird" monitoring plan that can be implemented opportunistically. Same as Alternative A. Work cooperatively with CDFG to maintain a natural diversity of intertidal organisms; also educate visitors to intertidal habitat.	Design management actions to minimize disturbance to nesting species of migratory birds. Design and implement a long-term "all bird" monitoring plan. Same as Alternative A. Same as Alternative C

Table ES-1: Summary of Alternatives

		ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C	ALTERNATIVE D
		Provide a mix of habitats to support wildlife game species.	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.
		Native wildlife reintroductions will not be a stated objective of this plan, however BLM will work cooperatively to assess suitability of reintroductions proposed by CDFG and other entities.	Same as Alternative A.	Same as Alternative A. Participate in casual monitoring of recently introduced Roosevelt elk populations.	Same as Alternative A. Participate in cooperative monitoring with CDFG of recently introduced Roosevelt elk populations.
TERRESTRIAL/ VEGETATIVE ECOSYSTEMS					
Habitat	Manage for a mosaic of diverse habitat types and plant communities that historically occurred in the King Range.	Implement habitat-specific management actions, as described below:	Implement habitat-specific management actions, as described below:	Implement habitat-specific management actions, as described below:	Implement habitat-specific management actions, as described below:
	Carry forward general vegetation guidelines from current planning documents; there are currently no specific management actions for individual habitat types.	Maintain a semi-stable coastal dune system near mouth of Mattole River by eradicating invasive plant species.	Maintain a semi-stable coastal dune system near mouth of Mattole River by eradicating invasive plant species and assessing habitat trends with qualitative monitoring.	Maintain a semi-stable coastal dune system near mouth of Mattole River by eradicating invasive plant species and assessing habitat trends with qualitative monitoring; also develop additional recreation use guidelines as needed to meet habitat objectives.	Same as Alternative C.
		Maintain a healthy and productive coastal scrub community.	Maintain a healthy and productive coastal scrub community that will produce forage for game species; also allow the establishment of decadent scrub communities as habitat for other species.		

Table ES-1: Summary of Alternatives

	ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C	ALTERNATIVE D
		Maintain healthy, productive grasslands, and encourage native species abundance and diversity when feasible, utilizing prescribed fire and manual removal of tree species. Maintain current levels of chaparral by allowing natural disturbances such as wildfire to maintain chaparral habitats; implement prescribed burns as needed in specific areas.	Utilize prescribed burns to maintain scrub; allow limited grazing on project-by-project basis. Maintain healthy, productive grasslands, and encourage native species abundance and diversity as needed, utilizing prescribed burns and manual means to mimic historic fire regimes; also pursue native grass enhancement projects, and allow limited grazing on project-by-project basis. Same as Alternative B.	Utilize prescribed burns and mechanical means to maintain scrub; allow limited grazing on project-by-project basis. Same as Alternative C. Same as Alternative B.
Special-Status Plant Species	Maintain and encourage viable populations of T&E and Special Status species known to occur in the King Range across all Zones.	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.
Invasive Plant Species	Continue on-going efforts to map, monitor, and eradicate invasive plant species. Work with various local organizations, agencies, and landowners to promote education and assist in preventing establishment of invasives. Remove invasives by manual means whenever possible.	Same as Alternative A.	Same as Alternative A, plus apply an Integrated Pest Management approach to all invasive infestations, utilizing manual means wherever possible.	Same as Alternative C.

Table ES-1: Summary of Alternatives

	ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C	ALTERNATIVE D
Sudden Oak Death	Work cooperatively with other agencies, provide appropriate information to the public, and monitor species known to be vulnerable to this pathogen.	Same as Alternative A. Implement preventative measures consistent with USDA and Humboldt County guidelines.	Same as Alternative A. Same as Alternative B. Implement additional control measures, such as vehicle “dip” stations, if found necessary to manage an infestation.	Same as Alternative A. Same as Alternative B. Same as Alternative C.
FOREST MANAGEMENT				
	Maintain undisturbed late-successional/old growth forest habitat, keeping such stands intact and allowing natural processes to prevail. Continue silvicultural treatments at Bear Trap Plantation.	Maintain and develop forest stand characteristic that are reflective of natural processes in forest ecology, based on a historical perspective prior to the onset of logging with mechanical means. Same as Alternative A. Same as Alternative A.	Same as Alternative B. Same as Alternative A. Utilize silvicultural treatments to restore structural diversity and enriched species composition to second-growth, previously harvested stands, encouraging or accelerating late-successional characteristics where possible.	Same as Alternative B. Same as Alternative A. Same as Alternative C.

Table ES-1: Summary of Alternatives

	ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C	ALTERNATIVE D
		No salvage timber harvest operations will be conducted after a stand replacement fire.	Design silvicultural treatments to reduce fuel loading. Following a stand replacement fire in the Frontcountry or Residential Zones, burned timber may be removed, after careful analysis and with particular stipulations, as part of a salvage effort.	Same as Alternative C. Following a stand replacement fire in the Frontcountry or Residential Zones, burned timber may be removed, after careful analysis and with particular stipulations, as part of a salvage effort. Old logging roads may be reopened and new temporary roads may be built to remove burned or fire-killed timber. All temporary roads will be removed upon completion of the salvage operation.
	Other forest restoration efforts restricted to tree planting following any large replacement fires or road decommissioning projects.	Same as Alternative A.	Perform silvicultural treatments where possible via cooperative agreements, partnerships, and contracts, particularly with local communities or individuals. Tree planting will be done as part of forest restoration following a fire or road decommissioning. Only trees grown from native seed will be planted.	Same as Alternative C. Same as Alternative C.
SPECIAL FOREST PRODUCTS				
Mushrooms	Issue up to 30 permits for commercial (during a limited season) collection of mushrooms. Personal collection permits have a five-pound limit per day, and no	Issue personal collection permits only. Collection restricted to Frontcountry and Residential Zones.	Issue permits for commercial (during a limited season) and personal collection of mushrooms. The number of permits issued will depend on	Same as Alternative C.

Table ES-1: Summary of Alternatives

	ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C	ALTERNATIVE D
	seasonal restrictions.		availability of the resource and maintenance of sustainable populations. Monitor mushroom collection methods to prohibit destructive techniques. Encourage cooperative studies and monitoring programs.	Same as Alternative C. Same as Alternative C.
Beargrass	Issue cultural use permits for collection of beargrass.	Issue personal collection permits only. Collection restricted to Frontcountry and Residential Zones.	Same as Alternative A. Coordinate with local tribes to increase awareness and education regarding cultural use of beargrass. Implement active management efforts, such as localized prescribed burns, in a designated "Native American Beargrass Collection Unit."	Same as Alternative C.
Floral Trade Species	Issue Special Use Permits for collection of plants used in floral trade, such as huckleberry and salal.	Issue personal collection permits only. Collection restricted to Frontcountry and Residential Zones.	Same as Alternative A.	Same as Alternative A.
Fuelwood	Occasionally issue permits for fuelwood collection on a case-by-case basis.	Issue personal collection permits only. Collection restricted to Frontcountry and Residential Zones.	Issue permits for fuelwood collection resulting from creation of fuelbreaks or other forest improvement activities. No fuelwood permits would be issued for the Backcountry Zone or Mattole Estuary.	Same as Alternative C. Same as Alternative C.

Table ES-1: Summary of Alternatives

	ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C	ALTERNATIVE D
GRAZING MANAGEMENT				
	Maintain existing four active grazing leases and associated grazing allotments, representing a total of 2,050 AUMs.	Designate all rangelands as unavailable to livestock grazing in the King Range.	Same as Alternative A.	Same as Alternative A.
			Administratively redefine Spanish Flat grazing boundary to exclude the terraced prairie between and including Spanish and Randall Creeks in order to protect significant cultural sites.	Same as Alternative C.
			Administratively change land use allocations for four expired leases from available to unavailable to livestock grazing.	Same as Alternative C.
FIRE MANAGEMENT				
	Full suppression of all fires, regardless of cause, within all Zones to protect human life, property, and natural/cultural resources both within and adjacent to agency administered lands.	Full suppression of fires within the Residential Zone to protect human life and property and natural/cultural resources both within and adjacent to agency administered lands. Manage fuels for low intensity wildfires and reduce fire spread potential within this zone.	Full suppression of all fires, regardless of cause, within the Frontcountry and Residential Zones to protect human life and property and natural/cultural resources both within and adjacent to agency administered lands.	Same as Alternative A.
			Utilize prescribed fire and mechanical fuel reduction methods to manage fuels for low intensity wildfires and reduce fire spread potential within the Frontcountry and Residential Zones.	Utilize prescribed fire and mechanical fuel reduction methods to manage fuels for low intensity wildfires and reduce fire spread potential within all Zones.

Table ES-1: Summary of Alternatives

ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C	ALTERNATIVE D
	In the Backcountry and Frontcountry Zones, allow naturally ignited fires to burn. Manage fuels for variable intensity wildfires to create a landscape resistant to damages associated with large, high intensity fires, yet allow for the natural, dynamic effects of fire on the ecosystem. Suppress all human-caused fires in these zones, as well as natural fires that BLM and CDF agree may threaten private property, but minimize direct attack where possible. Practice Appropriate Management Response within the Front and Backcountry Zones to the extent it remains safe for fire suppression forces and does not pose a risk to adjacent private property. Same as Alternative A.	In the Backcountry Zone, allow naturally ignited fires to burn. Manage fuels for variable intensity wildfires to create a landscape resistant to damages associated with large, high intensity fires, yet allow for the natural, dynamic effects of fire on the ecosystem. Suppress all human-caused fires in these zones, as well as natural fires that BLM and CDF agree may threaten private property, but minimize direct attack where possible. Practice Appropriate Management Response within the Backcountry Zone to the extent it remains safe for fire suppression forces and does not pose a risk to adjacent private property. Same as Alternative A.	Same as Alternative A. Complete and maintain planned fuel break system. The system may be augmented through fuels reduction using broadcast burning.
Permits required for all campfires outside of developed campgrounds. Complete and maintain planned fuel break system. Use broadcast burning as a management tool on a case-by-case basis. Only use pile burning to remove cut fuels from fuel break system.	Complete and maintain planned fuel break system. Use broadcast burning as a management tool on a case-by-case basis. Only use pile burning to remove cut fuels from fuel break system.	Complete and maintain planned fuel break system. The system may be augmented through fuels reduction using broadcast burning. Extend the system, if opportunity arises, in areas such as Paradise and Finley Ridges.	

Table ES-1: Summary of Alternatives

	ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C	ALTERNATIVE D
	Perform burned area rehabilitation to mitigate damages associated with wildfires. Assist CDF in wildfire prevention and education.	Same as Alternative A. Same as Alternative A.	Same as Alternative A. Same as Alternative A. Use prescribed fire in Frontcountry and Backcountry Zones for fuels reduction, forest health, and unique habitat improvement. Explore opportunities for stewardship contracts with local interests to meet goals of hazardous fuels reduction.	Same as Alternative A. Same as Alternative A. Same as Alternative C. Same as Alternative C.
TRANSPORTATION AND ACCESS				
General Management	Provide a network of roads for public and administrative access that complement the rural character of the King Range NCA and surrounding Lost Coast region, and have minimal impacts on resource conditions.	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.
	Fulfill legal access requirements for private landowners and other rights-of-way holders and land use permittees.	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.
	All vehicle use is limited to designated roads and trails.	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.

Table ES-1: Summary of Alternatives

	ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C	ALTERNATIVE D
Specific Road Designations				
Prosper Ridge Road:	Accessible year round to all vehicles.	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.
Nooning Creek Road:	Accessible year round to all vehicles.	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.
King Range Road:	Accessible year round to all vehicles.	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.
Finley Ridge Road:	Accessible year round to 4-WD vehicles.	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.
Smith-Etter Road:	Accessible seasonally from 4/1-10/31 to 4-WD vehicles.	Same as Alternative A.	Same as Alternative A.	Accessible seasonally from 4/1-12/31 to all vehicles, with surface improvements.
Johnny Jack Ridge Road:	Closed (no legal access)	Same as Alternative A.	Same as Alternative A.	Accessible seasonally from 4/1-10/31 to 4-WD vehicles, contingent on BLM acquiring public access easements.
Windy Point Road:	Accessible seasonally from 4/1-10/31 to 4-WD vehicles.	Closed.	Same as Alternative A.	Accessible year round to 4-WD vehicles, with road upgrade for wet season use.
Telegraph Ridge Road:	Accessible seasonally from 4/1-10/31 to 4-WD vehicles.	Closed.	Same as Alternative A.	Telegraph Ridge Road: accessible seasonally from 4/1-12/31 to segmental vehicles to Spanish Ridge Trailhead. Remaining 0.9 miles 4-WD only.
Etter Road:	Closed.	Same as Alternative A.	Accessible seasonally from 4/1-10/31 to 4-WD vehicles.	Accessible seasonally from 4/1-12/31 to all vehicles.

Table ES-1: Summary of Alternatives

	ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C	ALTERNATIVE D
Paradise Ridge Road:	Accessible year round to 4-WD vehicles.	Same as Alternative A.	Same as Alternative A.	Accessible year round to 4-WD vehicles except first 1.5 mile (approx.) segment, accessible to all vehicles.
Saddle Mountain Road:	Accessible year round to 4-WD vehicles.	Same as Alternative A.	Same as Alternative A.	Accessible year round to all vehicles.
Mattole Estuary Road:	Accessible below mean high water mark.	Closed.	Open the main access road plus two designated routes totaling approximately two miles.	Accessible year round to all vehicles on all existing routes.
RECREATION				
Actions Common Across Zones	Provide adequate maps and visitor information. Stress compliance with coastal "Leave No Trace" principles.	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.
	Provide adequate and timely maintenance of all facilities, roads, trails, and signs to identified standards.	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.
	Provide supplementary rules and regulations, where required, to protect resources, visitor safety, and the community surrounding the King Range.	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.
	Evaluate all applications for special recreation permits on a case by case basis. Approve only those requests that are consistent with the goals of the different KRNCA use zones.	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.

Table ES-1: Summary of Alternatives

	ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C	ALTERNATIVE D
	Encourage and promote cooperative management efforts with local groups, communities, and interested individuals. Promote volunteerism. Construct fences or barriers where needed to control unauthorized visitation or use from public land onto private land. Install effective barriers to preclude vehicle use within designated closed areas. Enforce existing regulations and apply other regulations, if necessary, to address visitor safety or resource protection issues as they arise. Ensure that Universal Accessibility Standards are met for all new developed facilities and, where feasible, the retrofitting of existing facilities.	Same as Alternative A. Same as Alternative A. Same as Alternative A. Same as Alternative A.	Same as Alternative A. Same as Alternative A. Same as Alternative A. Same as Alternative A. Same as Alternative A.	Same as Alternative A. Same as Alternative A. Same as Alternative A. Same as Alternative A. Same as Alternative A.
Backcountry Zone	Continue the existing group permitting system, with no permit requirement or use allocation limits on private parties; require permits for all organized groups, both commercial and non-commercial.	Within 3 years, design and implement a comprehensive visitor use allocation system designed to maintain use numbers at current levels and provide high opportunities for solitude.	Within 5 years, design and implement a comprehensive visitor use allocation system designed to allow moderate use numbers and provide moderate opportunities for solitude. This will be an adaptive allocation system, progressing from limits on commercial groups during popular holiday weekends, to	Within 5 years, design and implement a comprehensive visitor use allocation system designed to allow higher use numbers and provide minimal opportunities for solitude. This will be an adaptive allocation system, progressing from limits on commercial groups during popular holiday weekends, to

Table ES-1: Summary of Alternatives

ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C	ALTERNATIVE D
Maximum group size of 15 “heartbeats” (people and livestock) on Lost Coast Trail and 10 on inland trails. No more than 25 people max. may depart from a given trailhead in one day.	In the interim: - Implement a self-registration permit system to better count users and aid in disseminating information to the public. - Maximum group size of 10 people (or 15 “heartbeats” of people plus livestock) on all trails.	requiring permits for all users within established limits on popular holiday weekends, to high-use season permits, to year round permits, as future increases in visitation necessitate. In the interim: - Same as Alternative B. - Maximum group size of 15 “heartbeats” (people and livestock) on all trails. No more than 30 people max. may depart from a given trailhead in one day. Designate specific camping locations to accommodate larger groups without overwhelming site or visitor experience, such as Big Flat/Miller Flat & Spanish Flat. Also designate “group avoidance areas” to be managed for lower visitation levels. On an interim basis, limit and discourage group camping at Cooskie, Buck, and Shipman Creeks. - Disallow competitive recreation permits.	requiring permits for all users within established limits on popular holiday weekends, to high-use season permits, to year round permits, as future increases in visitation necessitate. In the interim: Same as Alternative B. Maximum group size of 15 “heartbeats” (people and livestock) on all trails. No more than 45 people max. may depart from a given trailhead in one day. Designate specific camping locations that can accommodate larger groups without overwhelming the site or the visitor experience, such as Big Flat/Miller Flat and Spanish Flat.

Table ES-1: Summary of Alternatives

	ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C	ALTERNATIVE D
	No commercial groups allowed on Memorial Day and Fourth of July weekends.	Same as Alternative A. Coordinate with CDFG to move hunting season to begin after the Labor Day holiday weekend.	Same as Alternative A. Charge a nominal fee for overnight use, to be reinvested in management of resources and visitor services. Use information, education and increased presence of visitor services and law enforcement personnel during hunting season to minimize conflicts between deer hunters and other KRNCA visitors/neighboring private landowners.	No interim restriction on groups for holiday weekends. Same as Alternative C. Coordinate with CDFG to close KRNCA to hunting.
		Prohibit mountain bikes in anticipation of possible wilderness designation. Prohibit motorized watercraft landings, with the exception of emergencies. Work cooperatively to establish parameters for commercial flights over the KRNCA, and to discourage low-flying aircraft.	Allow mountain bikes on existing trails, but not on any new trails within WSAs, as per stated BLM policy. Same as Alternative B. Same as Alternative B.	Same as Alternative C. Manage motorized watercraft landings to minimize conflicts with other backcountry users.
	Maintain existing facilities at current levels of development; do not develop any new facilities.	Maintain existing facilities at a primitive level of development; do not develop any new facilities. Remove shelters or fire rings along the coast to maintain a	Develop minimal facilities as required to provide for visitor safety and resource protection, but not visitor convenience. This could include additional	Develop minimal facilities as required to provide for visitor safety and resource protection. This could include additional campsites or springs for potable

Table ES-1: Summary of Alternatives

ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C	ALTERNATIVE D
	more natural setting. Utilize off-site education and implementation of regulatory mechanisms to address visitor impacts.	campsites or springs for potable water. Possibly install unobtrusive bear-proof food storage systems and/or rustic, low-maintenance backcountry toilets at popular sites, but only if alternative solutions to these problems have proved unsuccessful.	water. Possibly install unobtrusive bear-proof food storage systems and/or rustic, low-maintenance backcountry toilets at popular sites.
Maintain existing fences and barriers to protect sensitive natural and cultural resources.	Maintain low-visual-impact fences and barriers only where absolutely necessary to protect sensitive natural and cultural resources.	Construct or maintain fences or barriers to protect sensitive natural and cultural resources, but only if alternative means of protection have proved unsuccessful.	Construct or maintain fences or barriers to protect sensitive natural and cultural resources.
Maintain existing network of trails.	Maintain existing network of trails. Provide gates, with horse passes added for equestrians.	Maintain existing network of trails; develop new trails as needed, particularly to provide some easier trails for a wider range of users.	Consider establishing a rustic backcountry ranger station along the coast for emergency services and information dispersal.
		Develop springs for potable water where feasible on upland trails, including side trails to provide access if needed.	Same as Alternative C.
		Identify and prioritize "horse friendly" trails.	Same as Alternative C.

Table ES-1: Summary of Alternatives

	ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C	ALTERNATIVE D
	Maintain the existing minimal signs and interpretive information, as required, to provide for visitor safety and resource protection. These include signs at trail junctions and marking private property boundaries.	Same as Alternative A.	Develop an easy-grade interpretative trail at Hidden Valley. Maintain the existing minimal signs and interpretive information, as required, to provide for visitor safety and resource protection. These include signs at trail junctions and marking private property boundaries, as well as identifying campsites, water sources, or other important features.	Same as Alternative C. Maintain the existing minimal signs and interpretive information, as required, to provide for visitor safety and resource protection. These include signs at trail junctions and marking private property boundaries, as well as identifying campsites, water sources, or other important features. Also provide rustic interpretive signs and install signboards or mini-kiosks at major camping areas (and ranger station if built) to highlight regulations, safety issues and low-impact camping techniques. Same as Alternative A.
Frontcountry Zone	Continue ongoing monitoring program to determine impacts of recreation use on natural and cultural resources, and to assess social impacts of changing visitor use. Maximum of 8 people allowed per campsite at developed campgrounds. Group size at Nadelos group camp can range from 15-50 people.	Continue ongoing monitoring program to determine impacts of recreation use on natural and cultural resources, and to assess social impacts of changing visitor use. Collect visitor use information with minimal impact on privacy of visitors. Determine maximum use levels at facilities on a site-by-site basis.	Same as Alternative A. Same as Alternative B.	Same as Alternative A. Same as Alternative B.

Table ES-1: Summary of Alternatives

ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C	ALTERNATIVE D
Maintain existing facilities.	Incorporate the Lost Coast Trail segment from Mattole trailhead to the Punta Gorda lighthouse into the backcountry visitor use allocation system. Provide and maintain trailhead facilities, including parking and information kiosks. Maintain campgrounds at Nadelos, Wailaki, Tolkan, and Mattole; provide potable drinking water at the latter two if feasible. Retrofit facilities where possible to meet Universal Accessibility standards. Remove Horse Mountain campground when facilities require renovation. Remove Honeydew campground if vandalism makes upkeep difficult, then maintain as a day-use facility with river access. Prohibit camping within a quarter-mile of Mattole	Same as Alternative B. Provide and maintain trailhead facilities, including parking and information kiosks. Develop new trailhead at Bear Creek. Maintain all campgrounds, and provide drinking water where possible. Retrofit facilities where possible to meet Universal Accessibility standards. Upgrade Horse Mountain campground to meet Universal Accessibility standards, and tie in to expanded mountain bike road/trail system. Upgrade Mattole campground, and manage camping in	Same as Alternative B. Provide and maintain trailhead facilities, including parking and information kiosks. Expand trailhead parking as needed. Develop new trailhead at Bear Creek. Maintain all campgrounds, and provide drinking water where possible. Retrofit facilities where possible to meet Universal Accessibility standards. Expand campgrounds as needed to accommodate increasing visitor use. Same as Alternative C. Upgrade Mattole campground, and manage camping in

Table ES-1: Summary of Alternatives

ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C	ALTERNATIVE D
	Campground.	undeveloped areas nearby. Evaluate possibility of group/overflow camping near river.	undeveloped areas nearby. Develop group/overflow camping near river.
Maintain existing trails.	Establish and maintain a minimal network of trails. Expand and improve interpretive trail between Wailaki and Nadelos; make a loop if feasible; make entire trail wheelchair accessible. Provide adequate trail maintenance and horse passes for equestrian use.	Develop additional trails as needed. Expand and improve interpretive trail between Wailaki and Nadelos; make a loop if feasible; make entire trail wheelchair accessible. Provide adequate trail maintenance and horse passes for equestrian use.	Provide overlook/picnic sites at scenic vistas. Develop additional trails as needed. Expand and improve interpretive trail between Wailaki and Nadelos; make a loop if feasible; make entire trail wheelchair accessible. Provide adequate trail maintenance and horse passes for equestrian use.
Continue to install signs as needed for visitor safety, orientation, and education, and to promote resource protection.	Same as Alternative A	Improve linkage between north and south segments of Lost Coast Trail; reestablish trail from Tolkan to Bear Creek.	Improve linkage between north and south segments of Lost Coast Trail; reestablish trail from Tolkan to Bear Creek.
Continue monitoring of use levels, and consider special uses on a site-by-site basis.	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.

Table ES-1: Summary of Alternatives

Residential Zone	ALTERNATIVE B			ALTERNATIVE C		ALTERNATIVE D
	ALTERNATIVE A					
	Maintain existing recreational and interpretive facilities at Mal Coombs Park including restroom, parking lot, picnic tables, the relocated Cape Mendocino lighthouse with accompanying interpretive information, monuments, interpretive panels, split rail barriers, and steps down to the beach and tidepools.	Upgrade restroom at Mal Coombs Park to ensure adequate provisions for persons with disabilities and accommodate heavy seasonal use.	Same as Alternative B.	Same as Alternative B.	Same as Alternative B.	Same as Alternative B.
		Possibly upgrade parking lot to make more efficient use of space.	Same as Alternative B.	Same as Alternative B.	Same as Alternative B.	Same as Alternative B.
		Work cooperatively with local groups to maintain the Cape Mendocino Lighthouse, memorials, and other approved joint community projects.	Same as Alternative B.	Same as Alternative B.	Same as Alternative B.	Same as Alternative B.
		Maintain existing pedestrian access to tidepools. Provide information and interpretation for tidepool ecology and diversity.	Same as Alternative B.	Same as Alternative B.	Same as Alternative B.	Same as Alternative B.
			Develop a group use area (and group use policy) for weddings, memorials, picnics, etc. Evaluate proposed additional projects (such as a children's playground) on a case by case basis to ensure that they maintain the scenic coastal environment and are consistent with the overall theme and ambience of the park.	Same as Alternative C.	Same as Alternative C.	Same as Alternative C.
	Maintain existing Black Sands Beach parking facility, restroom,	Maintain existing Black Sands Beach parking facility. Improve		Maintain existing Black Sands Beach parking facility. Improve		Same as Alternative C.

Table ES-1: Summary of Alternatives

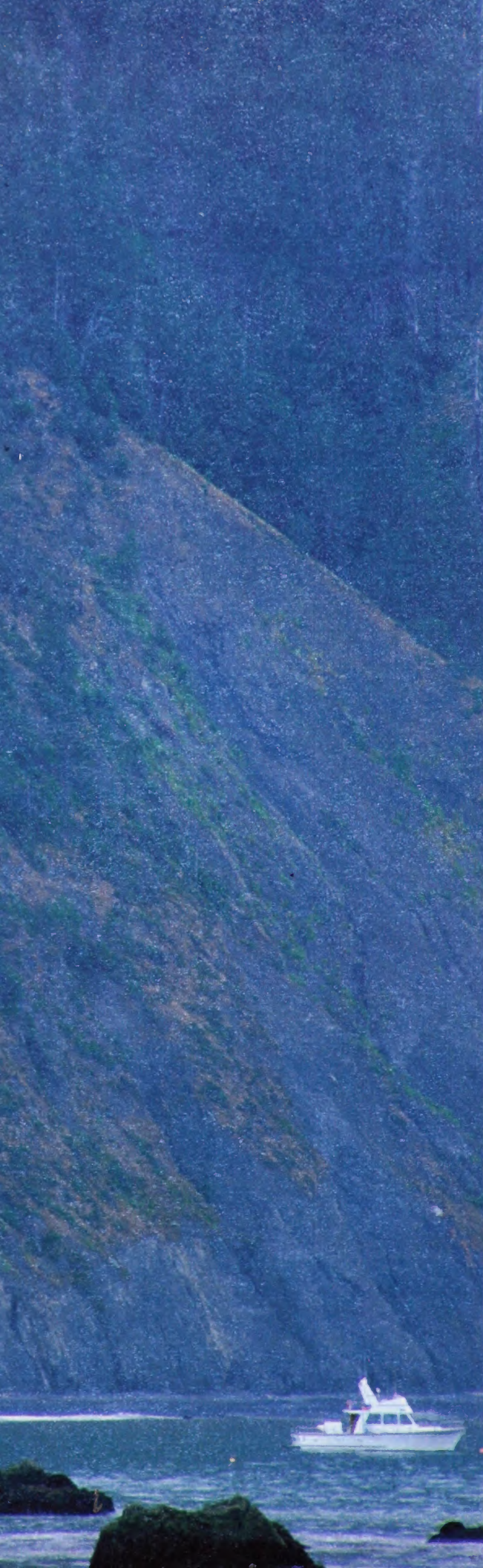
ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C	ALTERNATIVE D
overlooks, informational kiosks, emergency telephone and universally-accessible parking and off-loading area near beach. Ensure continued aesthetically pleasing landscaping, views from overlook, and visitor safety along cliff.	landscaping, views from overlook, and visitor safety along cliff. Maintain extensive visitor information kiosks. Disallow all camping within 1/4 mile from Black Sands Beach trailhead.	landscaping, views from overlook, and visitor safety along cliff. Locate additional sites, if feasible and as opportunities arise, to include additional vehicle parking and parking for horse trailers. Maintain extensive visitor information kiosks. Require commercial groups to camp at least 1/4 mile from Black Sands Beach trailhead and individuals and non-commercial groups to camp north of Telegraph Creek.	
Maintain Seal Rock and Abalone Point areas for individual and small group day use. Provide opportunities for picnicking, wildlife viewing, interpretation, and other compatible recreational and educational activities.	Same as Alternative A.	Maintain Seal Rock and Abalone Point areas for individual and small group day use. Provide opportunities for picnicking, wildlife viewing, interpretation, and other compatible recreational and educational activities. Permit group use events on a case by case basis.	Same as Alternative C.
Maintain wheelchair accessible trail in Mal Coombs Park to provide designated access between facilities. Maintain safe and adequate beach access trail at Black Sands Beach trailhead.	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.
Existing signs and interpretive information will be maintained to provide for visitor orientation, safety, and education, and to promote resource protection.	Adequate signs and interpretive information will be installed and maintained to provide for visitor orientation, safety, and education, and to promote resource	Same as Alternative B.	Same as Alternative B.

Table ES-1: Summary of Alternatives

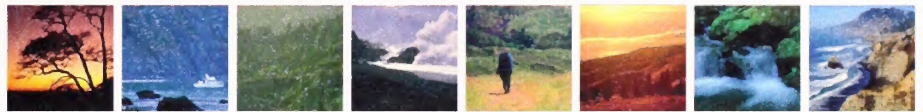
ALTERNATIVE A		ALTERNATIVE B	ALTERNATIVE C	ALTERNATIVE D
	Monitoring of visitor use will continue to be conducted by use of traffic counters, counting vehicles parked at Black Sands Beach trailhead, Lighthouse visitation data, observation sheets and patrol logs, and direct visitor contact.	protection. Same as Alternative A.	Same as Alternative A.	Same as Alternative A.
	Continue to allow group use events on a case by case limited basis if such use does not result in resource damage or impacts to nearby residents.	Group events may be authorized at Mal Coombs Park on a case by case basis if such use is consistent with the objectives of this zone and do not unduly impact local residents and other recreational users. Non-traditional and newly emerging recreational uses will be allowed as long as they are consistent with the zone management objectives. Such uses will be monitored to assess potential conflicts, impacts to sensitive resources, or visitor safety issues.	Specific areas and sites may be identified as special use areas to accommodate specific visitor needs. Development of a group use area in Mal Coombs Park will accommodate desired group events not available or as desirable at other BLM locations. Same as Alternative B.	Same as Alternative C. Same as Alternative B.
INTERPRETATION AND EDUCATION				
	Provide current, accurate, and descriptive information to visitors that facilitates a safe and enjoyable trip to the King Range while minimizing negative	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.

Table ES-1: Summary of Alternatives

ALTERNATIVE A		ALTERNATIVE B	ALTERNATIVE C	ALTERNATIVE D
	impacts on resources and surrounding communities.	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.
	Engage children and adults in learning about cultural and natural history and encourage stewardship of these lands.			



CHAPTER ONE : Introduction



1.0 INTRODUCTION

The Bureau of Land Management (BLM) has prepared this Draft Resource Management Plan (RMP) and Environmental Impact Statement (EIS) to provide direction for managing the King Range National Conservation Area (KRNCA) and associated public lands (see Figure 1-1), and to analyze the environmental effects resulting from implementing the alternatives addressed in this Draft RMP. The King Range Act (Public Law 91-476) established the nation's first National Conservation Area (NCA), on October 21, 1970 (Appendix A). The Act represented the culmination of years of effort to protect the area, beginning in 1929 when it was first withdrawn by Executive Order from deposition or sale, pending classification for protected status. The 1970 Act directs the BLM to complete "a comprehensive, balanced, and coordinated plan of land use, development, and management...based on an inventory and evaluation of the available resources and requirements for such resources, and on the topography and other features of the area." This RMP has been developed to meet that mandate by updating and expanding the area's original 1974 Management Program.

1.1 LOCATION AND BACKGROUND

The KRNCA is located along the rugged northern California coast about sixty miles south of Eureka and 200 miles north of San Francisco (see Figure 1-2). An abrupt wall of mountains thrusts 4,000 feet above the Pacific, making the area one of the most spectacular and remote stretches of coastline in the continental U.S. The elemental beauty and ever-changing mood of the Pacific Ocean meeting the wild, undeveloped coastline, old-growth forests and rugged peaks of the King Range inspired the original NCA designation, and continues to draw people from all over the world to visit the "Lost Coast" of California. Visitors pursue a wide variety of activities, including hiking and backpacking eighty miles of trails, camping, beach-combing, surfing, hunting, vehicular touring, and sight-seeing on a 100+ mile network of BLM and county-maintained roads, environmental education, and wildlife viewing. Additional uses involve special forest products collection (mostly wild mushrooms) and livestock grazing by several local ranchers.

The KRNCA was formally recognized on September 21, 1974, with the formal acceptance of the King Range Management Program and a public dedication ceremony held at Shelter Cove. The Management Program detailed management actions for approximately 54,000 acres of public and private lands within the boundaries of the KRNCA. In 1974, 35,000 acres were publicly owned, and 19,000 acres were in private ownership. The Federal Land Policy Management Act of 1976 (FLPMA, Public Law 94-579) extended the boundary of the KRNCA to its current configuration. Acquisition of private lands within the KRNCA has consolidated public ownership within the area. Currently the area includes approximately 58,000 acres of public and 6,000 acres of private lands. Numerous parcels of BLM-managed lands also adjoin the boundary of the area.

The BLM Arcata Field Office is responsible for management of the KRNCA. A project office, staffed by a manager plus resource, fire, and maintenance staff is located on-site in Whitethorn, CA, and is responsible for on-ground management in the KRNCA. The Arcata and King Range staff are responsible for the preparation of the KRNCA RMP.

King Range National Conservation Area

**Figure 1-1
Formal Plan Decision Area**

- Paved Roads
- Unpaved Roads
- - - Unimproved Roads
- - - Hiking Trails
- Rivers
- Streams

Recreation Areas

- King Range National Conservation Area
- Formal Plan Decision Area
- Bureau of Land Management
- California State Park

- Recreation Site
- ▲ Back County Camp Site
- ▲ Fire Station
- ▲ Coastal Access
- ▲ Hiking Trail
- ▲ Horse Trailheads
- ▲ Information
- ▲ Wildlife Viewing Area
- ▲ Launching Ramp
- ▲ Lighthouse
- ▲ Picnic Area
- ▲ Trailhead
- ▲ Tent Sites
- ▲ Water
- ▲ Trailer, Tent Sites

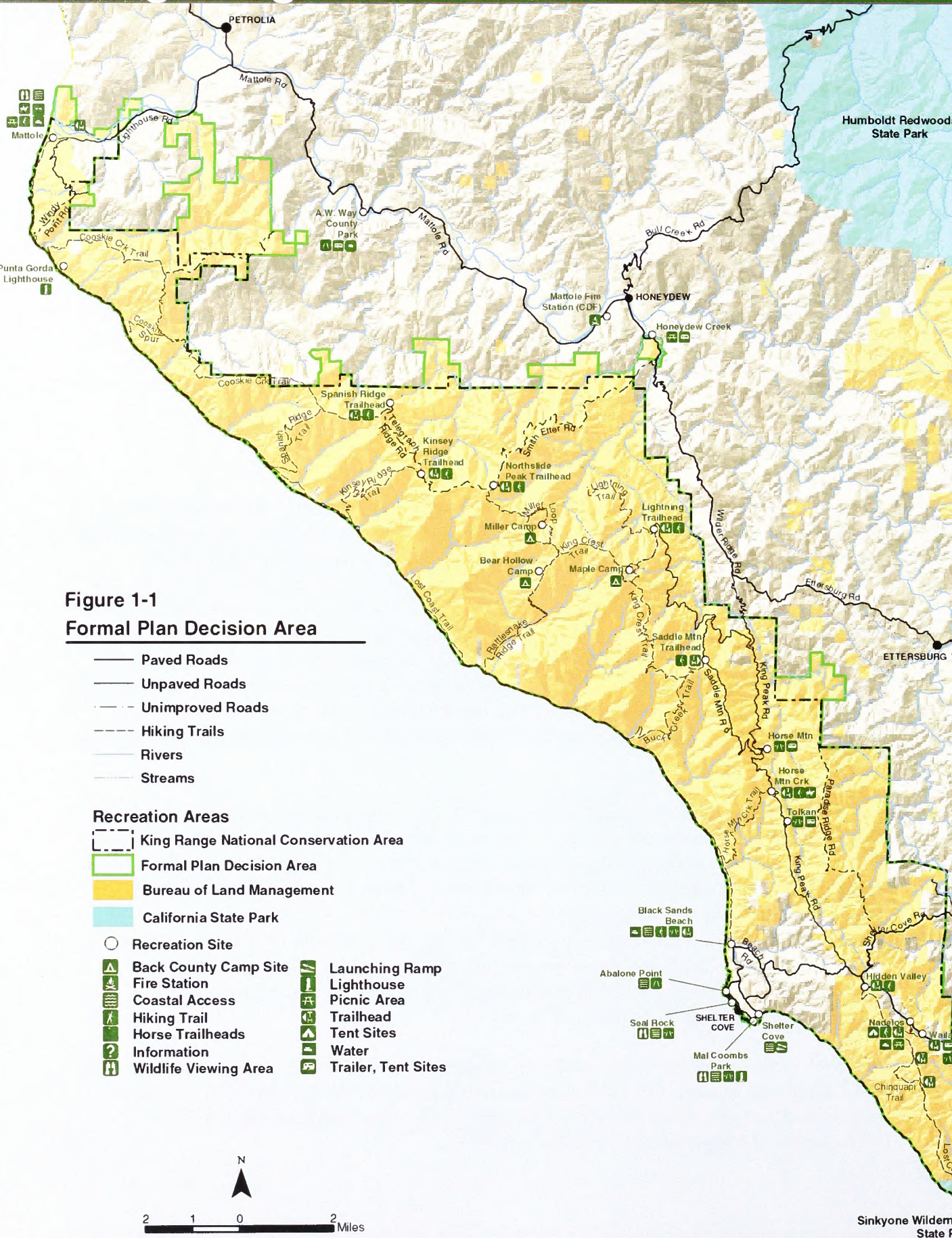
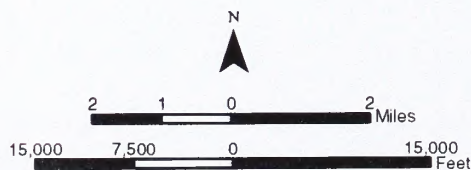




Figure 1-2

1.1.1 Planning Area Description

The formal plan decision area encompasses lands within the Congressionally-designated KRNCA, as well as BLM-managed lands contiguous to the KRNCA and two non-contiguous BLM parcels: one is the site of the KRNCA Project Office/Visitor Center, and the other, the Honeydew Creek Campground. Formal decisions in the plan will only apply to these lands. The planning area encompasses approximately 69,000 acres.



View of the King Range NCA looking north.

However, a planning “area of influence” will also include the surrounding region stretching from McNutt Gulch near Petrolia in the north to Whale Gulch in the south, including the Mattole River Watershed (see Figure 1-1). The plan will recognize that these nearby lands, communities, resource values, and uses are all affected by management of the KRNCA, and their use/values in turn affect management of the KRNCA. For example, land use decisions in the portion of the Mattole watershed within the KRNCA can affect anadromous fish spawning success for the entire Mattole Watershed. Also, community efforts such as the “Redwoods to the Sea” project, the Mattole Headwaters Ecological Reserve, and the Mill Creek Conservancy Project are encouraging stewardship programs that link the resource values of the KRNCA to these nearby lands. The plan may suggest actions for areas or programs that are not under the BLM’s jurisdiction but directly affect KRNCA management (for example, county road signs, tourism information programs, etc.). However, final decisions regarding these actions will rest with the appropriate agency or community land stewardship plans/programs. Similarly, actions related to BLM lands outside the KRNCA planning area will be carried forward as recommendations for incorporation into the appropriate BLM plan.

BLM planning guidance promotes making land use plan decisions at different geographic scales to ensure that issues are addressed in their entirety and to encourage public involvement. The KRNCA Resource Management Plan will follow this guidance and address certain issues that extend beyond the planning area so that they are considered holistically. For example, the communities of Garberville, Redway, and

Ferndale are outside the planning area boundary, but are directly linked to the KRNCA regarding tourism and recreation issues.

The planning area is in Northern California Coast Ranges Geographic Province and includes about 38 miles of rugged Pacific coastline, extending inland up to seven miles. The spine of the King Range is the most prominent geographic feature, and separates a number of west slope coastal watersheds from the Mattole River, which drains the entire east side of the KRNCA. The 340 square mile Mattole watershed historically has supported significant runs of anadromous fish such as salmon and steelhead. The fishery has been threatened by a variety of human impacts, and local communities are actively working to restore the watershed. Public lands in the KRNCA encompass about twelve percent of this watershed.

1.2 PURPOSE AND NEED FOR THE KING RANGE RMP

The 1970 King Range Act provides overall guidance, management objectives, and legal mandates that must be incorporated into the RMP. Section 2(b)(1) states that “that there will be a comprehensive, balanced, and coordinated plan of land use, development, and management of the Area, and that such plan will be based on an inventory and evaluation of the available resources and requirements for such resources, and on the topography and other features of the Area,” and Section 2(b)(6) requires that the “plan will be reviewed and re-evaluated periodically.” See Appendix A for the specific mandates and management guidelines of the 1970 Act.

The purpose of the King Range RMP is to evaluate the 1974 Management Program and amendments and reaffirm and reestablish guidance, objectives, policies, and management actions for the KRNCA that reflect current issues, knowledge, and conditions. This planning effort is be comprehensive in nature, evaluating existing management plans and resolving or addressing issues within the KRNCA identified through public, interagency, and within-agency scoping efforts. This effort also identifies the area’s mission, long-range management goals, intermediate objectives, and actions and options to meet those objectives.

Several additions and adjustments to the original Management Program have occurred since 1974 as environmental conditions, public needs, and management issues and strategies have changed: rule making has been implemented through publication in the *Federal Register*; activity-level plans have been developed and implemented; and the Northwest Forest Plan (April 1994) amended all public land use management plans in the Pacific Northwest, including the King Range Management Program. An additional plan amendment was made in 1998 to change management of Black Sands Beach to non-motorized use only.

This RMP analyzes the current management situation and identifies desired future conditions to be maintained or achieved and management actions necessary to achieve objectives. The plan addresses and integrates all existing management plans and programs, including but not limited to: fire management; livestock grazing; threatened and endangered species; recreation and visitor services; watershed management; and transportation. The plan meets stated requirements of the King Range Act.

The following list of specific factors illustrates the need for preparation of an updated plan. The existing plan is thirty years old. Many conditions, both social and resource-based, have changed since 1974, including:

- The passage of FLPMA in 1976 expanded the boundaries of the KRNCA and established guidelines, rules, and regulations for the administration and management of public lands. FLPMA also required lands within the KRNCA to be evaluated for wilderness values, and established interim management requirements to protect these values.
- Listing under the 1973 Endangered Species Act of the northern spotted owl, marbled murrelet, chinook and coho salmon, and steelhead trout, among other species, has significantly affected forest management activities in the Pacific Northwest, including the King Range. Forest management objectives proposed in the 1974 plan are no longer appropriate.
- The 1994 Northwest Forest Plan amended all federal land use plans and established land allocations and standards/guidelines for management of habitat for late-successional and old-growth forest related species within the range of the northern spotted owl, including the KRNCA.
- The counties in which the KRNCA lies, Humboldt and Mendocino, and the entire State of California have undergone dramatic changes in social and economic conditions since 1974. Locally, the economic base has shifted from mostly resource extraction (particularly timber) to a mixed economy of which tourism is a major component. The population of the two counties continues to grow at a moderate rate. California's population has grown by more than fifty percent since 1974 and is expected to double in the next forty years. Approximately ten million people live within a five hour drive of the KRNCA. Recreation on public lands has changed dramatically over the past thirty years, both in levels of use and kinds of recreational activities, including commercial use, which were not addressed in the 1974 Management Program.
- During the past ten years, local and regional conservation organizations have begun to look to the BLM to acquire lands, or have acquired lands themselves for transfer to the BLM. They are entrusting the BLM to manage these lands to protect significant ecological values and to add to regional biodiversity adjoining and surrounding the KRNCA. The RMP will assess the stewardship of newly acquired lands such as the Mill Creek and Squaw Creek parcels as they relate to the management of the KRNCA.

1.3 MISSION AND VISION STATEMENTS

The following mission and vision statements were developed based on the direction, intent, and spirit of the legislation and policies establishing and directing management of the area, the KRNCA's role as a component of the BLM's National Landscape Conservation System, and input from the public during the scoping process for the plan:

“The BLM will manage the King Range National Conservation Area to conserve one of America's last wild and undeveloped coastal landscapes for the use and enjoyment of present and future generations.”

Within this vision, the BLM will:

- Provide recreation opportunities that complement the rugged primitive character that makes the area distinctive as California's Lost Coast.
- Provide for use of natural resources in a sustainable manner.

- Protect and enhance wildlife habitat with an emphasis on species dependent on old-growth forests.
- Provide healthy watersheds for aquatic species with emphasis on anadromous fisheries restoration.
- Respect community values and seek opportunities for local involvement in area conservation and use.

1.4 PURPOSE OF THE BLM'S LAND USE PLANNING PROCESS

The land use planning process is the key tool used by the BLM, in coordination with the public, to protect resources and designate uses on public lands managed by the agency. All recent land use plans for public lands managed by the BLM are referred to as "Resource Management Plans." Planning is critical to ensuring a coordinated, consistent approach to managing these lands in accordance with FLPMA and other applicable laws and regulations. Planning efforts are done in accordance with principles of multiple use and sustainability, in a manner that recognizes the nation's need for domestic sources of minerals, food, timber, and fiber. Plans are also intended to protect the quality of scientific, scenic, historical, ecological, environmental, air and atmospheric, water, and archeological resources. Where appropriate, lands will be managed to preserve and protect certain public lands in their natural condition to provide food and habitat for fish and wildlife and domestic animals, and to provide for outdoor recreation and human occupancy and use. To accomplish the above, the BLM will (as described in the BLM Land Use Planning Manual):

- Provide on a continuing basis an inventory of all public lands, their resources, and other values. This inventory shall be kept current so as to reflect changes in conditions and to identify new and emerging resource and other values (FLPMA, Section 201(a)).
- Use an interdisciplinary process for evaluating resource information that considers physical, cultural, and biological resources in conjunction with social and economic factors to decide appropriate public land uses.
- Ensure opportunities for participation by Indian tribes, State and local governments, other federal agencies, and the public in a way that coordinates land use inventory, planning, and management activities with these other jurisdictional entities. Such participation will help ensure that land use plans for public lands are consistent with the plans and policies of these entities to the maximum extent consistent with federal law (FLPMA, Section 202(c)(9)), and that policies of approved Indian tribal land resource management programs are considered (FLPMA, Section 202(b)).
- Use collaborative and multi-jurisdictional approaches, to the extent possible, to encourage consistency in planning across different land ownerships and jurisdictions.
- Provide the public with a documented record of land allocations and permissible resource uses and constraints.
- Provide a framework to guide subsequent implementation decisions.

1.5 PLANNING PROCESS

1.5.1 Planning Process and Schedule

The BLM follows an eight-step planning process as shown in Table 1-1, along with the key timeframes for this RMP.

Table 1-1: BLM Planning Process

BLM PLANNING PROCESS STEP	DESCRIPTION	TIMEFRAME
Step 1 – Planning Issues Identified	Issues and concerns are identified through a scoping process that includes the public, Indian tribes, other federal agencies, and state and local governments.	Completed December 2002 (see Section 1.6.3 below; also Chapter 5)
Step 2 – Planning Criteria Development	Planning criteria are created to ensure decisions are made to address the issues pertinent to the planning effort. Planning criteria are derived from a variety of sources including applicable laws and regulations, existing management plans, coordination with other agencies' programs, and the results of public and agency scoping. The planning criteria may be updated or changed as planning proceeds.	Completed February 2003 (see Section 1.6.4 below)
Step 3 – Data and Information Collection	Data and information for the resources in the planning area are collected based on the planning criteria.	Completed April 2003
Step 4 – Alternatives Formulation	A range of reasonable management alternatives that address issues identified during scoping is developed.	Completed June 2003
Step 5 – Alternatives Assessment	The estimated environmental effects of each alternative are estimated and analyzed.	Completed August 2003
Step 6 – Preferred Alternative Selection	The alternative that best resolves planning issues is identified as the preferred alternative.	Completed August 2003
Step 7 – Resource Management Plan Selection	First, a Draft RMP/EIS is issued and made available to the public for a review period of ninety calendar days. During this time, the BLM will hold another round of public meetings to gather comments, as well as accepting comments in writing. After comments to the draft document have been received and analyzed, the draft is modified as necessary, and the Proposed RMP/Final EIS is published and made available for public review for thirty calendar days. A record of decision (ROD) is signed to approve the Final RMP/EIS.	Draft RMP/EIS: available to the public January 2004 Proposed RMP/Final EIS: Estimated October 2004 ROD: Estimated February 2005
Step 8 – Implementation and Monitoring	Management measures outlined in the approved plan are implemented on the ground, and future monitoring is conducted to test their effectiveness. Changes are made as necessary to achieve desired results.	Ongoing upon approval

1.5.2 RMP Implementation and Monitoring

Development of the RMP constitutes a major federal action and is therefore subject to the National Environmental Policy Act (NEPA) of 1969. NEPA requires federal agencies to consider environmental consequences in their decision-making processes, so as to protect and enhance the environment through well-informed federal decisions based on sound science. The President's Council on Environmental Quality (CEQ) issued regulations for implementing NEPA (40 CFR 1500-1508), including provisions on the content and procedural aspects of the required environmental analysis. The most comprehensive level of analysis is the Environmental Impact Statement, or EIS—the level being applied to the King Range RMP. Development of the alternatives considered in this RMP, and assessment of their effects, is required by NEPA. This document is a joint RMP/EIS and fulfills NEPA requirements, CEQ regulations for implementing NEPA, and the requirements of BLM's NEPA Handbook, H-1790-1.

During implementation of the RMP, additional documentation may be required to comply with NEPA, such as environmental assessments (EAs) for site-specific actions. All such documents would be prepared with the appropriate level of public input. Implementing RMP decisions would be monitored continually to ensure successful results. The implementation progress would also be evaluated periodically. RMP amendments would be prepared if a proposed management action was not consistent with the RMP-prescribed decisions. Revisions or amendments to the RMP may be necessary to accommodate changes in resource or user needs, policies, or regulations. An RMP revision involves preparation of a new RMP to replace the existing one. An RMP amendment is initiated by the need to consider monitoring and evaluation findings, new data, new or revised policy, a change in circumstances, or a proposed action that may result in a change in the scope of resource uses or a change in the terms, conditions, or decisions of the approved plan (43 CFR 1610.5-5).

1.5.3 Planning Themes and Priorities

A planning theme is defined as a matter of general concern or interest regarding resource management activities, the environment, or land uses that together serve to provide a framework for the RMP. These themes were identified through the issues and opportunities voiced during scoping at the beginning of this planning process. Scoping opened with publication of the notice of intent in the *Federal Register* on October 11, 2002 (volume 67, number 198). Media announcements and a planning update mailer requested public input and announced public scoping open houses, held in five cities during November 2002. The formal scoping period ended December 31, 2002, although additional comments were accepted after that date to accommodate mail and e-mail delays caused by a severe winter storm. All comments received by the deadline were compiled, reviewed, and assessed in a scoping report that was published in February 2003. Additional details about the public and agency involvement process are in Chapter 5 of this document.

Based on the scoping comments and public outreach process, the following themes and priorities were identified to help guide the planning process:

1.5.3.1 Primitive Values/Character

Public comment revealed a strong consensus that people value the unique primitive character of the King Range landscape and wish to see it maintained unchanged through the next twenty years. Qualities that

contribute to this primitive character include perceptions that the area is wild, relatively roadless and inaccessible, undeveloped, and not crowded. Many commenters indicated that protecting this primitive character is central to their concerns about the area. This priority affects almost every issue in the King Range, even though people differ as to what actions they consider compatible with the area's character and/or what kinds of limits are necessary for its protection.

1.5.3.2 Recreation Use

Many people identified increasing recreation use levels and associated effects on the King Range as a major concern. People seem worried that the area will be “loved to death,” becoming more crowded and degraded from overuse, and cited a variety of adverse impacts they feel are already taking place. Several ideas for limiting use levels emerged from the scoping process, such as a backcountry permit system, placing use caps on certain areas (particularly the Lost Coast Trail), or otherwise dispersing users throughout the entire KRNCA, rather than concentrating use along the beach. Another suggestion was to limit or discourage large encampments.

Another key issue raised is whether multiple user groups can share trails or sections of the King Range. Some members of the public suggested that only the lowest impact recreation uses, such as hiking, backpacking, or surfing, should be allowed, again citing compatibility with the area's primitive character. Others disagreed, stating that to exclude activities such as equestrian use, mountain biking, and hunting would be unfair—and pointed out that any type of recreation can have high or low impacts on the area, depending on how people conduct themselves. Several pointed to the problems of congestion, trash, and sanitation at some of the backcountry camps as indicating that even backpacking can have negative impacts.

This leads to a third question in this category, concerning the appropriate degree of development for King Range recreation facilities and sites. Some people wanted to see the camps and other recreation sites remain relatively primitive in nature; others preferred improved facilities, either for greater comfort and/or to reduce impacts on the area's resources from overuse (such as informal backcountry camps where the lack of sanitary facilities may be causing contamination of streams from human waste). The construction of temporary driftwood shelters by some visitors also raised some concern from people who feel they detract from the primitive character of the beaches.

1.5.3.3 Transportation/Access

There remains some disagreement about the appropriate level of motorized recreation access in the King Range. Some people regard the noise, tracks, and other disruptions from motorized vehicles as incompatible with the primitive character of the area, especially on the beaches. Others suggested that limiting motorized access unfairly excludes certain user groups, particularly older visitors or those with disabilities who may not be physically able to explore much of the King Range under their own power. Questions also were raised as to the appropriateness of motorized watercraft (boats and jet skis) landing on the beaches.

A related issue of how best to maintain the road system and public access in the King Range revolved around the desire some have that the existing network of roads be maintained or improved, including suggestions such as maintaining some of the backcountry roads in a rough condition for four-wheel drive

or OHV users, or paving certain popular roads. Opposing this sentiment were a number of people calling for stricter limits on seasonal use of certain routes, better maintenance to prevent environmental impacts from erosion, or decommissioning some roads completely. There were also concerns about road safety, particularly as visitor levels (and hence traffic levels) have increased in the area.

1.5.3.4 Education/Interpretation

There is a large degree of public agreement that interpretation and education programs are important and should continue. Education programs are considered to be a vital link between the King Range and local communities, and the public voiced an interest both in learning more about natural and cultural resources and participating in education programs as volunteers or local experts. Topics of greatest interest or need include natural history, resource management, cultural uses of the landscape by Native Americans, and fire issues.



Tidepool tours are popular environmental education programs for both visitors and residents.

1.5.3.5 Community Support/Involvement

There was extensive local interest in and support for continued involvement and collaboration with the BLM on various aspects of King Range management, particularly education and restoration projects. However, people also expressed a variety of concerns about socio-economic impacts, with some interested in economic opportunities for local communities, but others cautioning against overdevelopment or becoming “gateway” communities. The plan will need to strike a balance between the issues of economic stability, sustainability, and community character and self-definition.

1.5.3.6 Resource Conservation and Management

Ecosystem restoration was a top concern among the public comments received in the scoping process. Many people stressed the importance of reintroducing native species, including the Roosevelt elk, other

fur-bearing species, and native grasses. Of equal importance was an emphasis on removing or preventing the establishment of exotic weed species. Issues pertaining to water, watershed management, and fisheries were also of great interest, reflecting the BLM's established commitment and involvement with salmon restoration and other watershed-level protection efforts within the King Range.

1.5.3.7 Fire Management

Participants in the scoping process communicated a clear concern about fire danger in the King Range and the BLM's role in protecting resources and property from damage. Opinions varied as to the degree of aggressiveness necessary for fire prevention and suppression; some advocated maintaining road access and fuels management, others preferred a lighter touch on the land. Worries about the risk of prescribed burns causing damage contrasted with discussions of the benefits in maintaining natural habitat and reducing fuel loads. There seemed to be a strong call for additional fire safety education, both for visitors recreating in the King Range and for residents. Better knowledge is seen as key to better protection.

1.5.4 Planning Criteria

Planning criteria identify the legal, policy, and regulatory constraints that direct or limit BLM's ability to resolve issues. They also help guide the development of alternatives. Planning criteria are based on standards prescribed by applicable law and regulations, agency guidance, analysis of information pertinent to the planning area, the result of coordination with the public, government agencies, and Native American tribes, and professional judgment.

Draft planning criteria were completed just prior to the open houses held in November 2002, and public comment on the criteria was solicited at those meetings and throughout the scoping process. No comments were received, so the criteria became proposed criteria. They are as follows:

- Recognize the uniqueness of the west slope of the King Range as a primitive backcountry coastline. Decisions will complement or enhance these values.
- Conduct a collaborative process with other federal agencies, state and local governments, private landowners, Native Americans, and others with authority or interest in resources and uses within the King Range. Specifically recognize state and county jurisdiction over wildlife and coastal resources: California Coastal Commission for the intertidal zone; California Department of Fish and Game (CDFG) for wildlife; Humboldt and Mendocino Counties for search and rescue; and California Department of Forestry (CDF) for fire.
- Comply with FLPMA, NEPA, the 1964 Wilderness Act, the 1966 National Historic Preservation Act, the 1970 King Range Act, the 1994 Northwest Forest Plan, and other applicable laws and policies.
- Recognize and complement community values in the Lost Coast region.
- Carry forward the zoning concept of the 1974 Management Program, and existing relevant decisions from this plan and its amendments.
- Use best available science and data for planning decisions, and use adaptive management where appropriate.

1.6 RELATIONSHIP TO BLM AND OTHER PLANS AND PROGRAMS

1.6.1 Relationship to BLM Planning Documents

The BLM has three primary levels of land use planning decisions: the RMP level, the activity level, and the site-specific level. This RMP focuses on broad resource objectives and direction, while providing some activity-level guidance and some site-specific decisions. The King Range RMP builds upon a thirty year history of management, planning, and implementation in the KRNCA. Figure 1-3 highlights some of the major plans and policies that have led to the present management of the area.

A complete Plan Evaluation with more detailed descriptions of plans and decisions is available from the BLM Arcata Office upon request. The summary below highlights the major decisions that will be carried forward into the new plan.

1.6.1.1 *Wilderness*

Wilderness studies were completed for all BLM lands as a requirement under Section 603 of FLPMA, and recommendations have been formally submitted from the President to Congress. Therefore, these decisions cannot be changed except by Congressional action. For the KRNCA, approximately 38,000 acres are being managed in two Wilderness Study Areas (WSAs) until Congress makes the final wilderness determination through legislative action. BLM is authorized to study new areas containing wilderness characteristics outside of the existing WSAs (for example, newly acquired lands, or lands where resource conditions have shifted to a higher level of “naturalness,” etc.) as part of the RMP process and will do so in this plan.

Rationale

Section 603 of FLPMA directed BLM to study all lands under its jurisdiction and make recommendations to Congress regarding their suitability for wilderness designation. The BLM completed this effort for the King Range in 1988 and the results are published as *Wilderness Recommendations, Arcata Resource Area, King Range WSA (Wilderness Study Area) and Chemise Mountain WSA*.

1.6.1.2 *West Slope Motorized Vehicle Access*

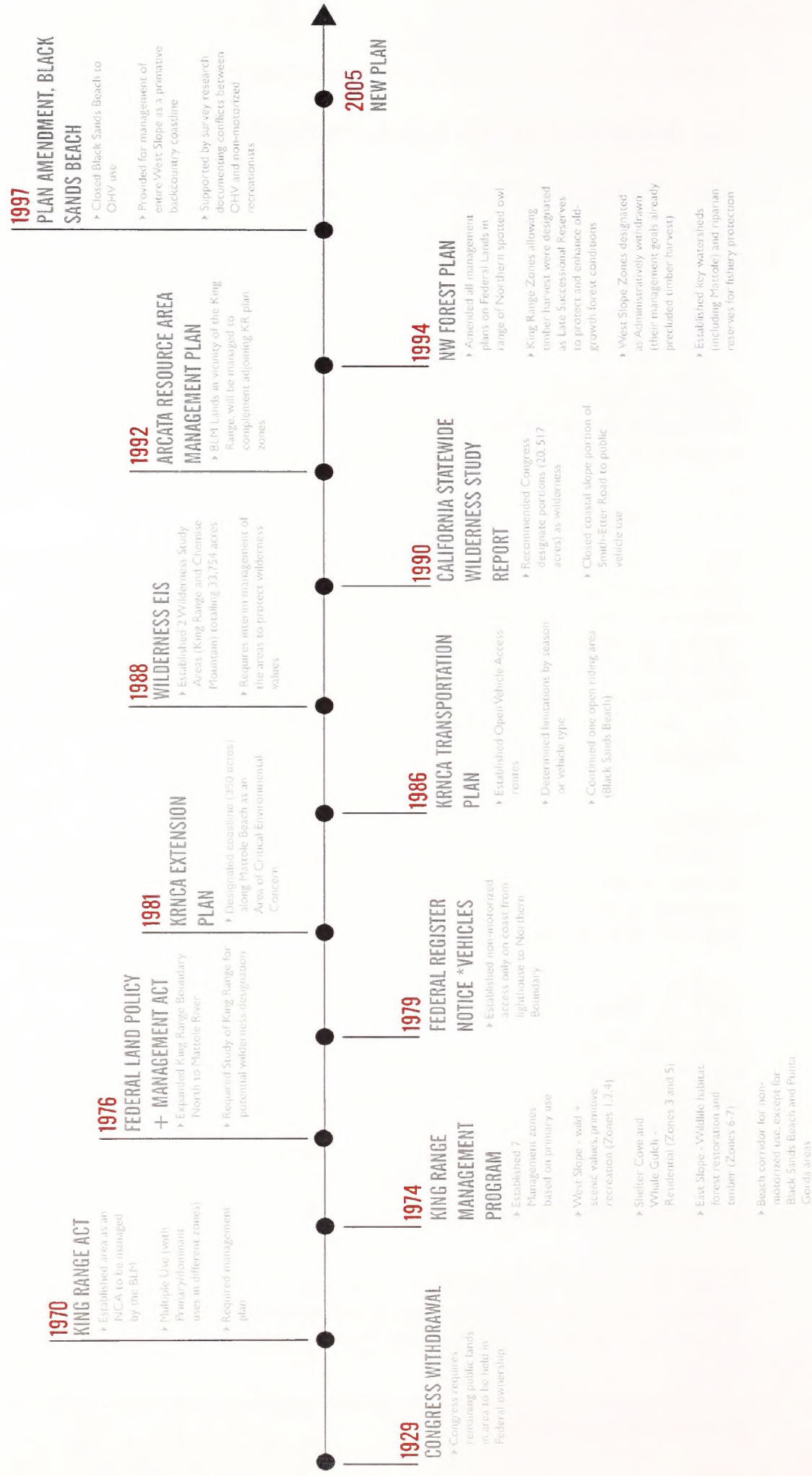
Non-motorized access on the western coastal slope, including the Smith-Etter road west of the Telegraph Ridge Gate, and the beach corridor from the mouth of the Mattole River to Black Sands Beach will be carried forward in the plan. The BLM will reevaluate all other roads identified on the eastern slope (approximately forty miles) as “open, limited, or closed” to vehicle use in the 1986 Transportation Plan. The OHV designations will not affect private inholder access. BLM will continue to work with private inholders on an individual basis regarding their access. Public land acquisitions made since the 1986 Transportation Plan was completed will also be evaluated for vehicle use designations.

Rationale

Non-motorized access on the west slope is consistent with years of management in the King Range, the management vision for the King Range, and WSA management requirements, as well as State Coastal

Figure 1-3

MAJOR LEGISLATIVE & PLANNING ACTIONS THAT SHAPED CURRENT MANAGEMENT OF KRNCA



Zone management, the King Range Act, area management goals, and the KRNCA RMP planning criteria. Vehicle designations are consistent with BLM Manual Section 8342; they minimize OHV use in areas with extreme natural or man-made hazards (such as abandoned roads that BLM can no longer maintain) and minimize damage to cultural and natural resources. The designations in the original Transportation Plan are now eighteen years old, and need reevaluation with attention to road safety, appropriate use levels, resource protection, and effectiveness of existing designations.

1.6.1.3 Northwest Forest Plan (NWFP)

BLM will carry forward the land allocations identified in the 1994 Northwest Forest Plan (late-successional reserves, riparian reserves, matrix, and administratively withdrawn lands¹) but will evaluate boundaries for potential adjustment. The standards and guidelines outlined in the NWFP will serve as forest land health standards for this plan. The allocation acreage figures for the King Range and adjoining lands are:

- Late-successional reserves: 45,437 acres
- Administratively withdrawn: 15,688 acres
- Matrix: 142 acres (Honeydew Creek Campground parcel)

Rationale

Consideration of land allocation boundary changes in the plan will allow for state-of-the-art forest health practices within the guidelines of the NWFP. Any proposed changes would be forwarded through the Forest Plan Regional Ecosystem Office for approval.

1.6.1.4 Rangeland Health Standards and Guidelines

Statewide standards and guidelines were adopted in 1997 for managing grazing on public lands administered by the BLM in California.

¹ “Administratively Withdrawn Areas” are areas designated in existing agency plans where management emphasis precludes timber harvest and that are not included in calculations of allowable sale quantity (ASQ). The NWFP specifies that the management guidelines for administratively withdrawn areas apply where they are more restrictive or provide greater benefits to late-successional and old-growth forest-related species than the provisions of the forest plan standards and guidelines. “Late-Successional Reserves” (LSRs) are designated to serve as habitat for late-successional and old-growth-related species including northern spotted owl. They are managed to protect and enhance old-growth forest conditions. LSRs, in combination with other allocations and standards and guidelines, maintain a functional, interactive, late-successional and old-growth forest ecosystem. No programmed timber harvest is allowed inside LSRs. “Riparian Reserves” (RRs) are areas along all streams, wetlands, ponds, lakes, and unstable or potentially unstable areas where the conservation of aquatic and riparian-dependent terrestrial resources receives primary emphasis. The main purpose of the reserves is to protect health of the aquatic system and its dependent species; they also provide incidental benefits to upland species. These reserves help maintain and restore riparian structures and functions, benefit fish and riparian-dependent nonfish species, enhance habitat conservation for organisms dependent on the transition zone between upslope and riparian areas, improve travel and dispersal corridors for terrestrial animals and plants, and provide for greater connectivity of late-successional forest habitat. “Matrix” is the federal land outside the categories of designated areas. The matrix includes the forested areas in which most timber harvest and other silvicultural activities will be conducted. The matrix also contains nonforested areas that may be technically unsuited for timber production. See NWFP 1994 for detail.

Rationale

BLM is required by statewide policy to use these standards and guidelines for evaluating rangeland health.

1.6.1.5 1974 King Range Management Program Zones

The 1974 King Range Management Program divided the NCA into seven management zones (see Figure 2-7), each with a designated primary use. Secondary or collateral uses could occur as long as they complemented or did not detract from the primary use. The original seven zones and their respective primary uses are as follows:

1. "Punta Gorda," Recreation
2. "West Slope," Recreation
3. "Shelter Cove," Residential
4. "Point No Pass," Recreation
5. "Whale Gulch," Residential
6. "Bear Creek," Timber Production
7. "Honeydew Creek," Wildlife and Fish Habitat

Some of these primary uses are no longer valid based on updated direction in the plan amendments and other decisions, discussed in 1.6.1.1 through 1.6.1.4 above. For example, under the Northwest Forest Plan, Zone 6 is now designated as a Late Successional Reserve, so its primary use is no longer timber production, but protection of late successional forest for wildlife values. Plan Alternatives B, C, and D (see Chapter 3) include three zones that revise and simplify the original management zones to reflect current resource conditions and management direction. Alternative A (No Action Alternative) carries forward the original seven zones. However, the primary uses are only carried forward where they reflect current KRNCA planning direction.

1.6.2 Relationship to BLM Programs

The BLM has established the National Landscape Conservation System (NLCS) to protect some of the nation's most remarkable and rugged landscapes. The system includes National Conservation Areas, National Monuments, Wilderness Areas, WSAs, Wild and Scenic Rivers, and National Scenic and Historic Trails. The King Range NCA is included in the NLCS.

1.6.3 Relationship to Other Agencies' Planning Documents

BLM planning regulations require that RMPs be consistent with officially approved resource-related plans of other federal agencies, state and local governments, and Native American tribes, so long as those plans are also consistent with the purposes, policies, and programs of federal laws and regulations applicable to public lands. Other agencies' plans relevant to the King Range planning area include the Sinkyone Wilderness State Park General Management Plan (under development), Humboldt County General Plan, and the Mendocino County General Plan. In addition, the RMP will be reviewed by the State for consistency with the Coastal Zone Management Act (1972).

This RMP is consistent with the applicable, officially approved resource-related plans of other federal agencies, state and local governments, and Native American tribes.

1.7 TOPICS NOT ADDRESSED OR BEYOND THE SCOPE OF THIS PLANNING EFFORT

Several topics identified during the preparation and scoping processes are not addressed in the RMP/EIS, as identified below. Rationale for not addressing them is also noted.

1.7.1 Congressional Wilderness Designation

Wilderness designation can only occur through an act of the U.S. Congress. The BLM was directed under the Section 603 of FLPMA to study all lands under its jurisdiction and make recommendations to Congress regarding their suitability for wilderness designation. The BLM completed this effort for the King Range in 1988 with its report, *Wilderness Recommendations, Arcata Resource Area, King Range WSA (Wilderness Study Area) and Chemise Mountain WSA*. The BLM does not have the authority to make the final decision regarding whether to designate these areas as Wilderness, or how much acreage to include under the designation; these decisions require Congressional legislation. All lands in the KRNCA that meet minimal requirements for wilderness designation are administratively protected as WSAs. The BLM will continue to manage the WSAs to protect their wilderness values until Congress makes a final decision regarding designation.

In addition, the BLM is authorized to study areas with wilderness characteristics outside of the existing WSAs (for example, newly acquired lands, or lands where resource conditions have shifted to a higher level of “naturalness,” etc.) as part of the RMP process and will do so under this plan.

1.7.2 Motorized Vehicle Use on the Beach

The decisions to manage the west slope backcountry for non-motorized use will be carried forward as existing decisions and not readdressed in this plan. A rationale for this decision is discussed in Section 1.7.1 above.

1.7.3 Land Acquisitions Outside of the Immediate King Range Area

The RMP will identify criteria for land tenure adjustments (acquisition and disposal) on lands both within the King Range and in the immediate King Range area. Other BLM public lands in northwest California are managed under the Arcata Resource Management Plan (RMP) which lists criteria and priorities for acquisitions.

1.7.4 Giving Local Residents Priority for Public Access and Contracts

Plan decisions must provide fair and equitable access to public lands for all citizens, and cannot be discriminatory based on location of residence. Therefore, decisions regarding programs or policies such as recreation use permits, site reservations, commercial permits etc. must be equitable. The same is true

for federal contracts, although issuance of contracts is an implementation action and is beyond the scope of the plan.

The Management Plan can incorporate or encourage opportunities for local residents to participate in area management, development of interpretive tours for local schools, provision of facilities for community functions, and other community-based actions.

Also, in implementing the RMP, the BLM will seek opportunities through the federal budget process and other special programs to encourage local community involvement and benefits from King Range management. This has already been done extensively at the King Range. For example, the “Jobs in the Woods” program has allowed for cooperation and funding of local community groups and contractors to complete watershed restoration work.

1.7.5 Estuary Water Export

Water rights or diversions for rivers are under the jurisdiction of the state and are outside the scope of the plan. The plan will address criteria for the issuance of rights-of-way (including those for water pipelines) across public lands in the King Range. Any future diversion proposal that crosses public lands would also require BLM participation in an analysis of environmental impacts under NEPA.

1.7.6 Private Land (Inholder) Access, Including Air Access to Big Flat

Access provisions to private inholdings are based on legal rights associated with each parcel and, therefore, are addressed individually with each landowner, and not at a planning level. Access provisions must ensure reasonable access to private properties consistent with federal laws and policies including the King Range Act.

1.7.7 Offshore Drilling

Decision-making authority regarding offshore drilling rests with the State of California and the U.S. Government’s Mineral Management Service and is not under the authority of the BLM, so it is outside the scope of this plan.

1.7.8 Military Flyovers

The Department of Defense (DOD) and Federal Aviation Administration (FAA) have jurisdiction over the airspace above the KRNCA. If routine military flights are proposed, the BLM will work administratively with the FAA and DOD at that time to minimize the effects of these flyovers on the area.

1.7.9 Marine Sanctuary

The plan will not address the formal designation of a coastal fish or marine sanctuary, as intertidal and marine resources are under the jurisdiction of other state and federal agencies including the California

Department of Fish and Game, the California Coastal Commission, the State Land Board, and NOAA Fisheries.

1.8 ORGANIZATION OF THIS DOCUMENT

This Draft RMP/EIS is composed of the following sections:

- Chapter 2, “Affected Environment,” is a description and analysis of the current environmental conditions and management practices in the KRNCA.
- Chapter 3, “Alternatives,” lists a set of four management alternatives for each major resource area in the KRNCA. The management agency’s preferred combination of alternatives is identified as well.
- Chapter 4, “Environmental Consequences,” is an analysis of the effects, both beneficial and adverse, of implementation of the management goals, objectives, and actions for each of the identified alternatives.
- Chapter 5, “Coordination and Consultation,” describes the processes of gathering public input and consultation with other agencies and jurisdictions during the development of this RMP. It also includes a schedule for public review and comment on the Draft RMP/EIS, and a list of preparers of this document.
- Chapter 6, “References,” includes a complete bibliography of documents and communications cited, plus a list of acronyms.
- Appendices include appendices that support analyses and conclusions of the planning process.

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CHAPTER TWO : Affected Environment



2.0 AFFECTED ENVIRONMENT

2.1 INTRODUCTION

This chapter describes the existing physical, biological, cultural, social, and economic characteristics of the King Range National Conservation Area and its associated planning area. The affected environment defines the baseline of existing conditions from which possible impacts of the plan alternatives may be analyzed. The majority of the data was provided by the BLM Arcata Field office; federal, state, county, and local agencies; various organizations; and other public and private sources. Data includes published and unpublished reports, maps, and digital format (GIS).

2.2 PHYSICAL ENVIRONMENT AND SETTING

2.2.1 Geology and Soils

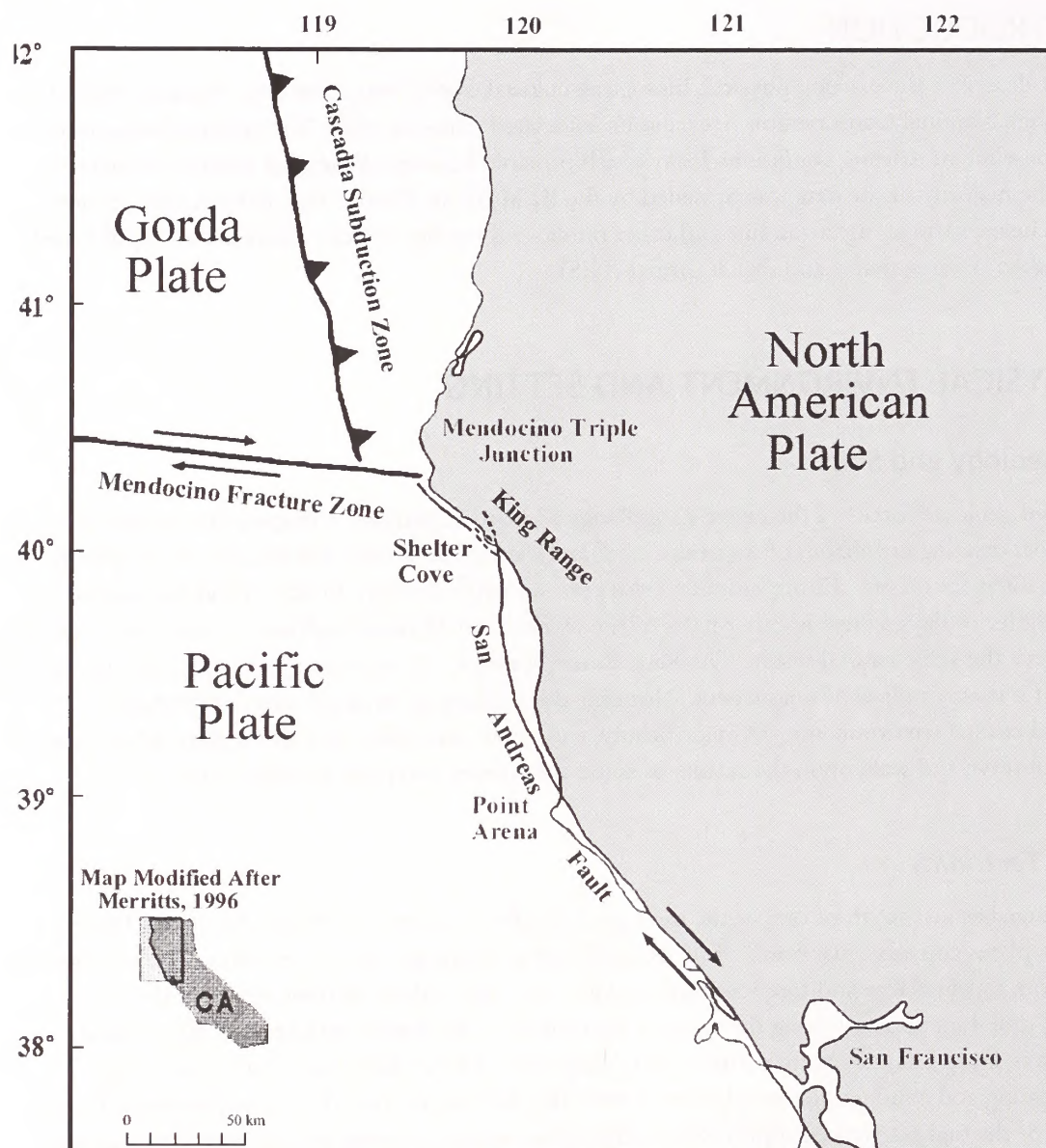
The combined geologic forces of the entire King Range area are continually reshaping the landforms of the Lost Coast, creating new habitat for stream, land, and marine life forms, and altering or completely eliminating habitat for others. Entire mountain sides are sometimes altered by storm and earthquake events in a matter of days, where in other parts of the world it would take hundreds or even thousands of years to achieve the same natural result. The King Range appears to be an area of geologic and climatic extremes, but it is also a place of uniqueness. Not only does it contain dynamic and fast changing mountain and coastal environments, dramatic beauty, and scenic coastlines, it is also a place where one can directly observe and walk upon the results of some very recent and great geologic forces.

2.2.1.1 *Tectonics*

The King Range lies just south of one of the most geologically active areas in North America. Three large tectonic plates converge just north of the King Range at a geologic feature known as the Mendocino Triple Junction, causing large and frequent earthquakes. The tremendous tectonic forces at the Mendocino Triple Junction and along the western front of the King Range have created high coastal mountain peaks, steep incised stream courses, and young coastal rock platforms. Geologists using radiometric dating and conducting coastal surveys have also determined that these compressional forces produce one of the highest geologic uplift rates in the world, which accounts for the high elevation and steep topography of the King Range (LaJoie et al. 1982, McLaughlin et al. 1983, Merritts 1989).

The geologic history and formation the Mendocino Triple Junction is very complex, but in general terms, three pieces of the earth's crust, called tectonic plates, are moving past and beneath each other in different directions (see Figure 2-1). This is unusual, as most earthquake-prone zones only involve two plates grinding against each other; the Mendocino Triple Junction represents one of the few places in the world where three plates meet close to land. North of the Junction, the Gorda Plate is being driven eastward beneath the North American Plate in what geologists refer to as the Cascadia Subduction Zone. This deep subduction zone is where most earthquake activity occurs in northwest California, and farther east and north creates the volcanic Cascade Range of mountains.

FIGURE 2-1: MENDOCINO TRIPLE JUNCTION



South of the Junction and along the western edge of the King Range, the San Andreas Fault forms the boundary between the Pacific and North American Plates; though much of its trace north of Point Arena lies beneath the ocean, geologic evidence suggests it bends shoreward briefly at Shelter Cove. The fault motion between these two plates is a sliding "strike-slip motion," with the Pacific Plate moving northwest and the North American Plate sliding southwest. The King Range rests on the North American Plate and moves with the plate on its southwest course.

West of the Junction, out at sea, the Pacific and Gorda Plates slide past each other in an east-west motion, forming a transform fault known as the Mendocino Fracture Zone. The east-west sliding motion also generates large sub-sea earthquakes felt throughout the entire region. This fracture zone

represents further bending of the San Andreas Fault, where it turns west from its trace along the coastal edge of the King Range.

In March 1992, three large earthquakes, measuring magnitudes 7.1, 6.6, and 6.7, struck an area immediately north of the King Range (the first quake was centered close to Petrolia, the two aftershocks offshore) at the Mendocino Triple Junction, and submerged land was dramatically uplifted from the ocean near the sites of these earthquakes. Intertidal rock platforms and beaches were raised as much as four feet above sea level, creating new tidal areas seaward while stranding marine organisms and eliminating some tidepool habitat closer to shore.

Before the 1992 earthquakes, Dr. Kenneth R. LaJoie, a research geologist at the U.S. Geological Survey, had mapped the low elevation marine terraces at Cape Mendocino just north of the King Range. He suspected that the unique bedrock features and beach ridges found along the entire Lost Coast might have formed during very large and recent earthquake events. Using radiometric carbon14 methods to date fossils and driftwood deposited in the terraces at Cape Mendocino, he determined that the lowest marine terrace was only 3,100 years old. LaJoie had suspected that this young marine terrace and other platforms further south along the western front of the King Range might have been uplifted suddenly during an earthquake event. The new coastal land surfaces that were uplifted during the 1992 earthquakes confirmed his theory. Further mapping and geologic dating by Merritts and Bull (1989) showed that multiple uplifted surfaces of various ages extend south along the entire Lost Coast. It is now generally accepted that these young marine platforms were created suddenly during earthquake events during the last 5,000 years.

Evidence of past earthquake events can be viewed along most the shoreline of the King Range in the form of older "fossil" marine platforms cut into the bedrock at higher elevations above the present day tidepools. These marine terraces represent not only geographic stair steps, but also steps back into recent geologic time with the youngest platforms at the lowest elevation, near the present shore line, and the oldest terraces at higher elevations further from shore.

Older marine terrace deposits are found near the southern end of the King Range, exposed in the sea cliffs at Shelter Cove. The relatively flat westward portion of Shelter Cove is made up of marine beach gravels and sands overlying on an uplifted marine bedrock terrace. This terrace was previously dated at approximately 40,000 years, much older than the low coastal terraces to the north. Dating of the Shelter Cove terrace was determined using carbon14 dates from fossil spruce cones in the young deposits overlying the terrace (McLaughlin et al. 1983), but recent geologic work on these same deposits indicate they may be slightly older, with dates in the 60,000 to 100,000 year range (Merritts et al. 2000). Immediately to the east, the marine terrace deposits are overlain by older landslide deposits which form the grassy and forested slopes above the Shelter Cove.

Much of the Lost Coast Trail, which extends along the beach from the Mattole River south to Shelter Cove, travels over uplifted rock platforms formed during very large earthquakes. If it were not for the tremendous geologic forces that uplifted this coastal area during the last few thousand years, much of the flat platform that the Lost Coast Trail rests upon would not be available for hiking and camping today. The marine tidepools found along the shoreline of the King Range have also evolved from this series of recent uplift events and earthquakes. The excellent surfing at Big Flat north of Shelter Cove owes its existence to the same forces, with the waves breaking on an uplifted but still submerged bedrock reef

close to shore. Rocks and small islands located just off the coast are made up of erosion-resistant remnants of marine platforms.

The famous San Andreas Fault has been mapped at Shelter Cove, its trace passing northwest through the upper slopes immediately east of the cove and entering the seafloor near the mouth of Telegraph Creek. This map trace was established shortly after the 1906 San Francisco earthquake, based on the mapping of ground breakage and fractures immediately after the earthquake. Since that time other geologists have proposed that the actual trace of the San Andreas lies offshore, and that the ground fractures mapped in 1906 were caused instead by landsliding (McLaughlin et al. 1983). However, the issue of where the San Andreas Fault trace actually lies in the vicinity of Shelter Cove is still not settled. A new team of geologists from the U.S. Geological Survey, who have re-mapped and trenched the geologic features at Point Delgada, proposed that the fault may indeed lie on land just east of Shelter Cove, in the vicinity or just east of the old 1906 fault trace near Black Sands Beach and Telegraph Creek (Prentice et al. 1999).

2.2.1.2 Rock Types and Age

Though the topographic features such as the high mountains and the uplifted bedrock platforms along the King Range are geologically young, they are composed of very old bedrock. Most of these rocks formed from deep ocean sediments and volcanic eruptions beneath the sea starting in the Cretaceous period, 60 million years ago, and continuing until the Eocene epoch, 40 million years ago. Some small outcrops of younger sandstone and shale, dating to the middle Miocene epoch, 15 to 24 million years ago, have also been discovered along the Lost Coast (McLaughlin et al. 1982).

In a simplified model, the rocks were transported in a conveyor belt-like fashion eastward on oceanic plates to the adjacent continental plate, where they were folded against and subducted beneath the older continental plate. Repetition of this subduction and deformation process over time formed fault-bounded belts of highly folded and fractured rocks, with the youngest rocks located on the western boundary of the adjoining continental plate. Some of the rocks that were subducted beneath the continental plate were altered by heat and pressure, then raised to their present position by faulting and folding, and later exposed by erosion. This subduction and accretion process formed most of the California Coast Ranges, including the King Range.

The rock types of the King Range are mostly marine sandstones and shale, but there are also minor occurrences of chert, conglomerate, and volcanic basalt (see Figure 2-2). The entire suite of rocks are grouped together in Franciscan Complex, a geologic formation which is divided into many fault bounded blocks of varying ages called "geologic terranes." Locally this group of Franciscan rocks is aptly called the King Range Terrane. Geologists have further divided the King Range Terrane into the King Peak and Point Delgada units, based on slightly different rock types and age differences. All of the rocks have undergone both shearing and folding, but folded rocks were found to be the most common (McLaughlin et al. 2000).

The younger King Peak unit of the terrane consists of mostly sandstone and shale, with some outcrops of conglomerate and rare occurrences of igneous rock in the form of basalt. Small outcrops of limestone and ribbon chert are sometimes associated with the basalt.

King Range National Conservation Area



The age of the rocks in the King Peak unit was thought to be the Eocene epoch, but some of these rocks have recently been dated to be from the middle Miocene epoch based on fossil evidence (McLaughlin et al. 1982).¹ There are no important mineral deposits in this group of rocks, with the exception of a small deposit of manganese that was mined by hand briefly during the mid-1950s from chert deposits at the Queen Peak Mine on the south fork of Bear Creek, then trucked to Arizona for processing.

The older Point Delgada unit of the King Range Terrane has a more complex range of rock types, well exposed at Shelter Cove in the tidal zone. These rocks include altered or metamorphosed sandstones and shale, and small outcrops of limestone, along with pillow basalts and other volcanic rocks such as volcanic tuffs, basaltic sandstones, and flow breccias. (McLaughlin et al. 2000). These volcanic rocks are the result of deep undersea volcanic eruptions approximately 60 million years ago. In addition there is a zone of tectonically sheared shale or “mélange,” which contains blocks of glaucophane blue-schist, chert, quartzite, and other volcanic rocks. Microfossils from this rock complex date from the Late Cretaceous period, much older than the above-mentioned King Peak unit. In some isolated areas hydrothermal waters have locally altered some of the rocks to form small veins of minerals such as pyrite, chalcopyrite, sphalerite, and galena (McLaughlin et al. 2000).

2.2.1.3 Soils and Geomorphology

The geologic forces at the Mendocino Triple Junction and frequent earthquakes, along with extreme climatic conditions, are responsible for shaping rugged topography and high mountain relief of the King Range. These same forces have also sheared and fractured large zones of rock, making them weak in some areas and susceptible to erosion and large landslides. High rainfall in the King Range, often reaching over 150 inches per year, accelerates the erosion process, especially in the rocks weakened by shearing and faulting, and landslides occur frequently.

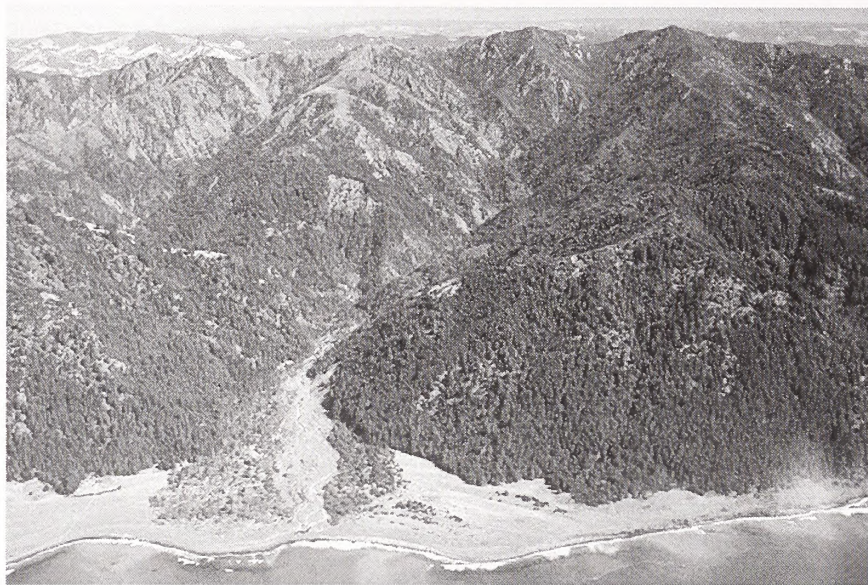
On the western slope of the King Range, landslides discharge large amounts of rock and soil into coastal streams. As the materials are transported downstream to the flat marine platforms, they may form large alluvial fan deposits such as those found on Spanish Flat and Big Flat. These alluvial fans are often used by hikers along the Lost Coast Trail as resting or camping spots, as they are flatter and more open than much of the coastline.

Large blocks of the more resistant sandstone form the steeper, sharp-crested slopes of the King Range such as King Peak, the highest point in these coastal mountains. These high ridges parallel the coastline and reach elevations near 4,000 feet within three miles of the shore, with western slopes dropping precipitously to the ocean. These steep slopes shed large amounts of surface rock and soil debris in the form of debris slides which sometimes reach all the way to the ocean shoreline. A recent example of this type of slide intersected the Lost Coast Trail during the winter in 2003 near Buck Creek.

Three dominant rock types control most of the topography and soil formation throughout most of the King Range: 1) isolated blocks of resistant massive sandstone, 2) zones of sheared shales, and 3) combinations of shale and sandstone found as thin interbeds or small sandstone units interrupted by shale beds. The massive or thick bedded sandstones form steep rocky faces with crested ridges,

¹ Fossils are extremely rare in this portion of the King Range, but age dating of the rocks has been determined using microscopic fossils such as foraminifera and diatoms found in the cherts, limestones, and some shales.

weathering to form sandy and silt rich soils found on the more stable slopes. Small side hill drainages in this rock type tend to be straight, well incised, and evenly spaced (McLaughlin et al. 2000). Examples of this type of topography are found along the Rattlesnake Ridge area near King Peak.



More resistant sandstone forms the sharp crested mountains in the King Range peak area.

The sheared shales weather to clayey soils and are structurally weak. Hill slopes with these rock and soil types tend to have rounded topography on the upper slopes and ridge crests with poorly incised side hill drainages. Excellent examples of this type of topography, soil, and bedrock can be found on the slopes and ridges immediately north and south of Cooskie Creek, along the western edge of the King Range.

Where the rock types are mixed shale and sandstone and are more heterogeneous, the hillslopes form more irregular slopes with intermediate steepness. According to observations by McLaughlin (2000), side hill drainages in these areas run directly downhill, have irregular spacing, and slopes have an irregular form or lumpy form. This type of landform can be found in the Horse Mountain Creek watershed.

Overall the landforms and soils types of the King Range blend together in soft mosaic when viewed from a distance or from the air. But each rock type, its structure, and weathering factor determines what landform and soil type will ultimately form. These geologic factors, when combined the sun angle, elevation, and ocean proximity, also determine the vegetation pattern of the King Range. The predominantly unstable soils, high rainfall (see below), and seismic activity require careful siting of roads, trails and facilities, as well as continuous maintenance to prevent their erosion and failure.



Less resistant shale bedrock and clay soils form the rounded topography in the northern part of the King Range.

2.2.2 Minerals and Energy Resources

Despite nearby Petrolia's name, the KRNCA contains few energy or mineral resources. The first commercial oil in California was produced from a well drilled near Petrolia in 1865, and there was sporadic exploration along the Mattole River between Honeydew and Cape Mendocino through the 1950s, but no significant production ever took place.

In 1929 the area was withdrawn from disposition by Executive Order 5237, which included a withdrawal of the public lands from non-metallic mining claims. An unpublished BLM Minerals Inventory was conducted in the King Range in 1962, and the resulting report described the area's geology as having little or no potential for most metallic minerals, and the extreme inaccessibility made most possible mining ventures impractical (Collins 1962a). At that time, 31 mining claims existed in the King Range, grouped around Queen's Peak, Saddle Mountain, and Big Flat, but only one had yielded any actual production. Known as the Bear Creek mine, it was an open pit operation that produced manganese in 1958 and '59, sold to a federal buying program. When the program shut down in 1959, the mine closed as well. A second unpublished minerals report from 1962 investigated an alleged quartz mining claim being excavated at the north end of Big Flat, but found it to be a search for buried treasure, and suggested that the attempt to take possession of the parcel as a quartz mine was invalid (Collins 1962b).

Section 6(a) of the 1970 King Range Act made all U.S. mining laws applicable on KRNCA lands, "except that all prospecting commenced or conducted, and all mining claims located after the effective date of this Act shall be subject to such reasonable regulations as the Secretary may prescribe to effectuate the purposes of this Act. Any patent issued on any mining claim located after the effective date of this act shall recite this limitation and continue to be subject to such regulations. All such regulations shall provide, among other things, for such measures as may be reasonable to protect the scenic and esthetic values of the Area against undue impairment and to assure against pollution of the streams and waters within the Area." Section 6(b) added: "Nothing in this section shall be construed to limit or restrict rights of the owner or owners of any existing valid mining claim." These restrictions were intended to

provide protection against unnecessary damage from prospecting or mining activities without eliminating this use outright (U.S. Congress 1970). No mining claims currently exist in the KRNCA.

Based on the low mineral potential, in-place protective policies, and lack of valid mining claims in the KRNCA, mineral issues are considered to be insignificant with minimal potential impact and will not be discussed or assessed any further in this RMP/EIS.

2.2.3 Paleontological Resources

Paleontological resources are the physical remains or other physical evidence of plants and animals preserved in soils and sedimentary rock formations. They are important for correlating and dating rock strata, and for understanding past environments, environmental change, and the evolution of life. There are no known paleontological resources of any significance or threatened by any public use or management activity in the KRNCA. The resource is not being affected by the plan and therefore will not be discussed or analyzed in this RMP/EIS.

2.2.4 Climate

The climate in Northwest California can be broadly described as Mediterranean; winters are wet and cool, and summers have virtually no precipitation. Nearly all rainfall occurs between October and May. Summer temperatures are warm in inland locations, and can exceed 100°F on the hottest days. Average air temperatures range from a high of 95°F to a low of 30°F. The coastline is moderated by the cold Pacific Ocean waters, with summer high temperatures in the mid-60s with many days of fog. Due to its extreme topographic relief, the KRNCA exhibits both coastal and inland weather characteristics in a relatively small geographic area. The rugged topography also causes some local weather anomalies in wind, rainfall, and temperature.

The 4,000 foot vertical rise of the King Range results in a high degree of orographic (terrain induced) lifting of storms approaching the coast, causing intense rainfall. Rainfall exceeds 100 inches annually and occasionally tops 200 inches on the ridges. In contrast, the immediate coast receives about half as much rain, with about 65 inches falling at Shelter Cove (see Table 2-1). The total amounts of precipitation combined with the often intense and prolonged rainfall events bring flood or near-flood events to the watersheds regularly. Twenty-four hour rainfall totals exceed 16 inches in the most intense storms.

Table 2-1: Comparison of Coastal (Shelter Cove) and Mountain (Wilder Ridge) Rainfall Totals

AREA	AVERAGE MONTHLY PRECIPITATION												
	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.	JAN.	FEB.	MARCH	APR.	MAY	JUNE	ANN.
Shelter Cove	0.23	0.77	1.60	4.32	8.21	11.77	10.76	9.82	8.96	4.50	3.20	1.22	65.40
Wilder Ridge ¹	0.11	0.60	1.20	6.06	16.84	23.46	22.81	19.81	17.49	7.02	3.93	1.39	120.71

¹ Trower rain gauge, Wilder Ridge Road 4 miles south of Honeydew, average for years 1980-2002.

Source: National Weather Service, Western Regional Climate Center Web Site, 2003.

Snow falls periodically at the higher elevations, but rarely at sea level. Although significant snow accumulations may occur on the King Range Crest, it usually melts within a few days, except in shaded

areas at the highest elevations. Here, snow may persist for several weeks or more and restrict road and trail access.

A coastal climatic anomaly associated with the King Range is the low incidence of summer fog. Although the coastal beaches receive some fog, it is much less prevalent than the rest of northwest California. Coastal summer temperatures are in the 60s (Fahrenheit) on days when marine air influences the area, but often climb into the 80s with strong offshore winds. The cool marine air layer is rarely deep enough to reach the King Range Crest, resulting in summer temperature inversions where the higher ridges are 20-30 degrees warmer than the coast, and often exceed 90°F. Table 2-2 compares average coast and inland temperatures throughout the year.

Table 2-2: Comparison of Coastal and Inland Temperatures

SHELTER COVE TEMPERATURES—COASTAL (°F)													
	JAN	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT	OCT.	NOV.	DEC.	ANN.
Avg. Max.	57.7	57.9	59.2	61.3	65.5	68.7	69.9	69.6	70.2	67.1	61.5	57.7	63.9
Avg. Min.	45.4	45.5	45.4	46.0	48.5	51.4	52.7	53.0	52.9	51.6	48.1	45.9	48.9
RICHARDSON GROVE STATE PARK—INLAND (°F)													
Avg. Max.	50.0	55.0	59.4	64.8	71.6	79.2	86.7	87.3	82.9	70.5	55.8	49.5	67.6
Avg. Min.	36.5	38.1	39.2	40.8	45.1	50.0	52.7	52.9	49.3	44.8	40.6	37.0	43.9

Source: National Weather Service Data, Western Regional Climate Center Web Site, 2003

The steepness of the King Range, combined with the topography of the river basins in the area, also produces an unusual local weather phenomenon of offshore winds emanating from a northeast to easterly orientation. This condition is an exception to the prevailing winds along the entire California coastline where the direction is usually onshore from west to southwest. “Flagging,” or the wind-caused pattern of leeward-only limb growth and development of ridgetop Douglas fir, points westward toward the ocean, indicating this typically easterly flow.

2.2.5 Air and Air Quality

Air quality for the planning area is managed and monitored by the North Coast Unified Air Quality Management District (NCUAQMD). The BLM does not have any ongoing operations in the King Range that fall under air quality permits issued by the state or federal government. The two primary unregulated sources of air pollution that can originate on public lands in the King Range are smoke from fires and dust generated from road use, maintenance, and rehabilitation.

In the event of a uncontrolled wildfire in the KRNCA, the NCUAQMD Regulation 2 (revised 1987 and adopted by the Basin Control Council of the California North Coast Air Basin and Mendocino County Air Pollution Control Board, 1988), contains provisions for the setting of backfires necessary to save life or valuable property (California Public Resources Code, Section 4426). The regulation also allows prescribed burning activities for the abatement of fire hazards (California Health and Safety Code,

Section 13055) and for forest management, range improvement, disease or pest prevention, or the improvement of land for wildlife and game habitat (California Health and Safety Code Section, 39011[a]).

The BLM can burn only when sanctioned by the California Air Resources Board or the NCUAQMD (California Health and Safety Code, Section 41855). The BLM must comply with the guidelines set forth in the North Coast Unified Air Quality Management District Particulate Matter (PM10) Attainment Plan (1995) in order to achieve the California Ambient Air Quality Standards for PM10. Smoke management concerns must be addressed in all prescribed fire plans. For all prescribed burns over ten acres in size, a Smoke Management Plan must be submitted to the NCUAQMD for approval prior to ignitions. Smoke emissions from prescribed burning activities may have minimal intermittent effects on the visual resources of the King Range NCA and surrounding communities, but are not expected to significantly impact the Humboldt Bay Air Basin or the Ukiah—Little Lake Air Basin.

Dusty roads are not considered to have a significant affect on air quality due to the absence of ultramafic or serpentine bearing rock formations within the KRNCA (L. Green, pers. comm. 2003).

Currently, road maintenance activities are performed during moderately wet periods during the fall and spring to ensure adequate soil moisture content. This seasonal operation reduces dust generation during grading and enhances road surface compaction, which results in road surfaces that are less prone to dust generation from routine traffic and less likely to erode under precipitation. Occasionally, application of dust suppressants like lignosulfate, magnesium chloride, and calcium chloride is required to mitigate dust generation from certain roads in the front-country when climatic conditions are very dry. Dust suppression is not performed immediately adjacent to sensitive surface water bodies. King Range operations are either not subject to or are currently fully compliant with all air pollution control requirements. There are no planned operational changes that will result in generation of regulated air pollutants; therefore, no specific alternatives have been identified to address air quality.

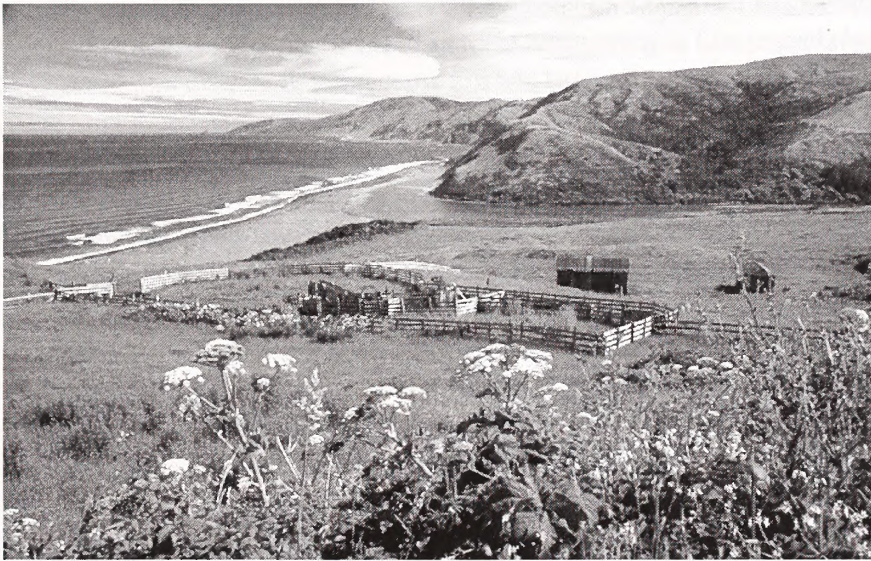
2.2.6 Visual Resources

The KRNCA encompasses one of the most dramatic coastal landscapes in the contiguous 48 states, and conservation of the area's scenic attributes was an important factor in its designation as a National Conservation Area. The scenic qualities of most landscape settings in the KRNCA are mostly defined by dramatic natural features. The characteristic landscape in the southern two-thirds of the area consists of steep walled, heavily forested mountains rising abruptly from black sand beaches. On the lower slopes, solid forests are only broken by occasional landslides carving long open swathes down to the waterline. Upper slopes are a mosaic of dark green conifers and pale snags interspersed with patches of grey-green chaparral. North of Kinsey Ridge, the vegetation changes to a mixture of forest and golden coastal prairies.

In the northern part of the King Range, cultural resources also contribute to scenic values. Wooden structures from historic and present-day ranching operations are integral parts of a highly scenic pastoral landscape. The historic Chambers Cabin, with associated barn and corrals set against a majestic backdrop of coastal prairies, regularly appears in scenic calendars and books. The Punta Gorda Lighthouse, perched on a rocky outcrop above an isolated stretch of beach, is another example of a popular scenic attraction.



The southern part of the King Range is characterized by heavily forested mountains plunging into the Pacific.



Historic ranching structures contribute to the pastoral scenic qualities in the northern part of the King Range.

When developments complement and borrow form, line, color and texture from existing landscape features, they minimize impacts to the characteristic landscape to retain the visual integrity of the area. The BLM uses the Visual Resource Management (VRM) system as a framework to assess scenic values on public lands and manage visual impacts from activities and projects. Public lands are inventoried based on three factors:

- Relative levels of scenic quality: In the King Range, the coastal slope contains outstanding scenery and is known nationally for its dramatic meeting of mountains and sea. The inland ridges, although still very scenic, are more typical of other landscapes in northwestern California.

- Level of viewer sensitivity to landscape changes: The highest viewer sensitivity occurs at popular public use areas such as scenic overlooks, recreation sites, and trail and road corridors. Areas visible from private residences also receive high sensitivity ratings.
- Distance of an area from points or corridors of high viewer sensitivity: Even minor landscape changes are very evident when viewed in the foreground zone, but these changes become less evident with distance.

Based on these inventory factors, VRM classes are assigned to different areas of public land and used as a basis to consider visual values in the planning process. The VRM classes are then adjusted if necessary to reflect the resource allocation decisions and management actions proposed in various plan alternatives.

Each VRM class allows for projects with differing degrees of contrast with the characteristic natural landscape elements of form, line, color, and texture. As described below, the higher numbered classes allow for projects with greater contrast to the landscape.

2.2.6.1 VRM Inventory/Management Classes

Class 1: The objective of this class is to preserve the landscape's existing character. This class allows for natural ecological changes and only very limited types of management activities and uses. Any contrasts with the natural landscape must be minimal and not attract attention.

Class II: The objective of this class is to retain the landscape's existing character. The level of change to the characteristic landscape should be low. Management activities and uses can be seen, but should not attract the attention of the casual observer. Any changes must repeat the basic elements of form, line, color, and texture in the predominant natural features of the characteristic landscape.

Class III: The objective of this class is to partially retain the landscape's existing character. The level of change to the characteristic landscape can be moderate. Management activities and uses may attract attention, but should not dominate the view of the casual observer. Changes should repeat the basic elements of the predominant natural features of the landscape.

Class IV: The objective of this class is to allow for management activities and uses requiring major modifications to the natural landscape. The level of change to the characteristic landscape can be high. Management activities and uses may dominate the view and be a major focus of viewer attention. However, every attempt should be made to mitigate the impacts of activities through careful location and repeating the visual elements of the landscape.

When projects or actions are proposed in the planning area, a visual contrast rating is conducted to ensure that they are designed and located to meet the VRM Management Class objectives. For example, a project to restore coastal prairie in the northern part of the KRNCA should borrow from the existing size, shape, and texture of nearby natural openings.

2.3 CULTURAL AND SOCIOECONOMIC ENVIRONMENT

2.3.1 Introduction

The socioeconomic context refers to the social, economic, and cultural connections of nearby communities with the KRNCA. It incorporates the region's social history, and informs community assessment and response to resource management issues. The social mix of individuals and groups affects community cohesiveness, capacity for cooperation and problem solving, and other social variables that influence the identification and response to resource management issues. Cultural orientations, especially sense of place, values about natural resources, and world views about nature influence how groups identify management issues and construct acceptable solutions.

Because BLM interacts frequently with nearby residents and groups to address local concerns and issues regarding KRNCA management efforts, the area's history and sociocultural composition are important elements to incorporate into any planning effort.

Roughly 500 acres of the KRNCA fall within northern Mendocino County, but the social and cultural dynamics in the area connect most strongly to southwestern Humboldt County. The small communities of Petrolia, Honeydew, Ettersburg, and Whitethorn/Thorn Junction lie just outside the KRNCA boundary, while Shelter Cove, currently a mostly-residential subdivision, is completely surrounded by BLM lands. Gateway communities close to Highway 101, the major north-south route, include Garberville, Redway, and Ferndale. The largest cities in the region are Eureka and Arcata, both 1-2 hours north of the KRNCA by car (see Figure 2-3).

Because Humboldt County is where most local communities and other potentially affected socioeconomic resources are located, it is the primary focus of this section. As a result, many data on existing economic conditions is provided at the county level for Humboldt County only; comparative information for Mendocino County is provided where appropriate. In addition, some statewide economic indicators are provided to help put local conditions in perspective; however, other state and national economic conditions are not addressed because the RMP update only has the potential to cause very minor or negligible economic impacts beyond the local study area. However, given the importance of the KRNCA to a variety of social groups, the social portion of this section addresses issues in a broader context beyond the local study area. Thus, the affected social environment also includes urban northern California and many other areas where many King Range visitors reside, or where people are found who care about and identify with the King Range but do not actually visit the Lost Coast.

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Figure 2-3

2.3.2 Applicable Regulatory Framework

Section 202 of FLPMA requires BLM to integrate physical, biological, economic, and other sciences in developing land-use plans (43 USC § 1712).

Section 102 of NEPA requires federal agencies to “insure the integrated use of the natural and social sciences ... in planning and decision making” (42 USC § 4332). FLPMA regulations 43 CFR § 1610 and the BLM Manual 1601 Land Use Planning and H-1601-1 Land Use Planning Handbook further elaborate on this legislative mandate.

Federal agencies are also required to “identify and address ... disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations in the United States” in accordance with Executive Order 12898 on Environmental Justice.

The Council on Environmental Quality's Regulations for Implementing the Procedural Provisions of NEPA (40 CFR 1500-1508) provide guidance related to social and economic impact assessment by noting that the “human environment” assessed under NEPA is to be “interpreted comprehensively” to include “the natural and physical environment and the relationship of people with that environment” (40 CFR 1508.14). Furthermore, these regulations require agencies to assess not only “direct” effects, but also “aesthetic, historic, cultural, economic, social, or health” effects, “whether direct, indirect, or cumulative” (40 CFR 1508.8).

2.3.3 Historical Context

Today’s KRNCA is a landscape of intricately connected patterns of human and natural history. Past settlement and uses of the area by a variety of peoples has been as important as ecological processes in shaping and creating the place that the BLM manages today. In order to better understand how the King Range came to look the way it does, as well as the context in which BLM management is taking place, it is important to briefly review the area’s cultural history and present-day social context.

2.3.3.1 *Native Americans*

Prehistory

Prehistory in the West is often divided into four time periods: Early, Paleoindian, Archaic, and Late Prehistoric, although some scholars use different terms.² No Early or Paleoindian Period sites have been located in the King Range planning area and hence these periods will not be discussed further.

² For example, for the north coast of California, Fredrickson (e.g., 1974) refers to the Late Prehistoric as the Emergent Period. The cultural contents of these temporal periods are called a variety of terms in different geographical areas by different scholars and are typically named for an archaeological type site where a pattern, complex, or horizon was first described, but sometimes for the person who discovered it. The patterns, complexes, or horizons may be subdivided into phases or aspects, often named for an archaeological type site. Prehistoric periods have been presented in these arbitrary terms by archaeologists working with the archaeological record as a means to define and separate the past so it can be discussed in segments rather than as a continuum.

The Archaic Period is generally divided into (1) Early (ca. 8,000 to 5,000 years ago) represented by millingstone assemblages characterized by unshaped manos and metates made of a variety of rock types suggesting a generalized hunting and hard seed collecting economy; and (2) Middle (ca. 5,000 to 3,000 years ago) characterized by the bowl mortar and pestle indicating a shift to an emphasis on an acorn processing economy; and Late (3,000 to 1,500 years ago). These various time periods can usually be distinguished by specific projectile point typologies. There is also an increase over time in the numbers of projectile points found at sites, which can be interpreted as intensification of hunting. Early and Middle Archaic Period sites have not yet been identified along the coastal strand but have been recorded inland approximately six miles from the coast. Scientific archaeological excavations and analysis of several prehistoric sites on the King Range coast date the remains to the Late Archaic Period. The coastal area appears to contain cultural deposits no older than 2,800 years, possibly due to the continued geologic uplifting and erosion factors.

For the Late or Emergent Prehistoric Period, a regional migration model was proposed by Whistler (1979) based on linguistics. Whistler suggests that the Yurok moved into the area around A.D. 1100, displacing the Wiyot, who may have settled the area 200 years earlier, to the south. Both of these groups have languages based in Algonquian linguistic family. The Yurok brought a well-developed fishing and woodworking technology that they easily adapted to their new marine and riparian homeland; these technologies soon spread to groups in adjacent areas. From their smaller river canoes, they developed the large dugout canoe for exploiting offshore sea mammal rookeries in their new environment (Hildebrandt 1981). Whistler also suggests that the Sinkyone, Mattole, and Bear River groups, all speaking variations of an Athabaskan linguistic pattern, arrived in the King Range region approximately 600 to 700 years ago (ca. A.D. 1400).³ Evidently, they too adopted many of the Yurok fishing, woodworking, and hunting techniques and technologies.

Archaeologically, the migration of the Wiyot and Yurok is associated with the Gunther Pattern. This artifact assemblage consists of harpoon points, nets, and fish hooks, groundstone net sinkers, Dentalium shell beads, the distinctive Gunther Barbed projectile points, bird bone flutes, abalone (*Haliotis*) ornaments, steatite bowls, antler woodworking wedges, stone mauls, antler spoons, large and miniature ceremonial bifaces, and groundstone zoomorphs. Most of this assemblage is the same as that found throughout the archaeological sites along the King Range coast (excepting steatite bowls, carved elk antler spoons, and groundstone zoomorphs). The assemblage suggests an economy adapted to coastal and riparian resource exploitation, hunting, fishing, and hard seed and acorn processing.

Ethnographic Information

The KRNCA is within the traditional territory of the two Athabaskan speaking groups known today as the Mattole and Sinkyone. These groups, along with the Bear River people, were located between Coast Yuki and Pomo to the south and Wiyot and Yurok to the north and the Wailaki to the east (see Figure 2-4).

³ Note that the Bear River people are sometimes discussed as a separate group (Baumhoff 1958; Nomland 1935, 1938), but more often are lumped with the Mattole (Elsasser 1978; Kroeber 1925).



Figure 2-4
Approximate Tribal Boundaries
in the Early 19th Century



The Mattole and Sinkyone acquired some technology as well as cultural and religious traits from neighbors on all sides, adapting what they could to suit their localized needs and were, therefore, considered transitional between Central California and Pacific Northwest Culture Areas (Elsasser 1978 at 191; Fredrickson 1984; Kroeber 1925 at 146). Any knowledge of their lifeways is based on sketchy accounts by early explorers and settlers; interviews with elderly Sinkyone, Mattole, and Bear River people; commonalities with other groups; and archaeological evidence. Not many local Native Americans survived the widespread aggression of early Euroamerican settlers, ranchers, and soldiers—those not killed off were removed to reservations out of the area. A few eventually found their way back home.

Political subdivisions among the northwest Athabaskans consist primarily of what Kroeber called *tribelets* (Kroeber 1925; Moratto 1984 at 5-6). These were small groups with territory typically limited to a single river drainage or valley. *Tribelet*s often had a single principal village or settlement with strategically placed seasonal camps for resource procurement throughout their territory. The traditional territory of the Mattole was along the coast from the vicinity of Davis Creek south to Spanish Flat. It extended inland perhaps fifteen miles to include the lower and middle portions of the Mattole River drainage, after which one entered Wailaki territory to the east. The Mattole are said to have had two *tribelet*s with some sixty village sites (Baumhoff 1958).

The Bear River people lived between Davis Creek and Fleener Creek, with the Bear River dividing their territory (Nomland 1938). They evidently controlled both banks of the drainage inland some ten miles. No information is recorded about the number of *tribelet*s, but Baumhoff (1958) identified seven village sites (Elsasser 1978 at 191). At least one Bear River descendant and her children presently live at Rohnerville Rancheria in Loleta.

The Sinkyone are typically discussed in terms of a northern and southern group. The Northern group called Lolangkok controlled the upper reaches of the Mattole River and parts of the main fork and south fork of the Eel River but had no territory on the coast. The southern Sinkyone group is called the Shelter Cove people. Their territory included a portion of the coast from Spanish Flat in the north to Usal Creek and Rockport in the south. They had four *tribelet*s and approximately eighteen villages (Nomland 1935).

The natural environment of the Mattole, Sinkyone, and Bear River people centered on the coastal strand, utilizing resources from the ocean with its intertidal rock outcrops and beaches, to grassy or forested hillsides rising steeply from the flats to as much as 4,000 feet, to creeks and rivers emptying into the ocean. Subsistence was based on seasonal rounds of gathering and hunting. Tanoak was the most important source of edible acorns, with major stands growing throughout the upper reaches of the King Range. Hazel nuts, manzanita berries, native blackberry, raspberry, and elderberry were important vegetal resources. Other edible seeds and nuts were harvested along with various grass seeds and berries (pine nuts, buckeye, huckleberry, Oregon grape, salal, wild strawberries, crow berries, and thimbleberries, to name a few). Greens were harvested during spring and summer; acorns, berries, and grasses became available in late summer and fall.

The Mattole and Sinkyone were in a very favorable environment for hunting and fishing. Along the coast, they caught birds, marine mammals, mollusks, seaweed, eels, fish, and the occasional beached whale. Huge runs of salmon, steelhead, and surf fish such as smelt were important marine resources in northern California and the Pacific Northwest. Salmon and steelhead were taken with spears, fish hooks, and nets. During winter, the Mattole built a fishing weir at the mouth of the Mattole River, an

undertaking that required a huge cooperative effort, where men fished while women and children transported, cleaned, smoked, and stored the fish (Fredrickson 1984:480). In late summer and fall, smelt (a small fish similar to sardines) came onto sandy beaches to spawn; these were taken with nets in the shallow water. The entire village camped on the beach along with friends and relatives from inland groups. Fish, shell fish, and whale meat were dried for use during the lean winter months (Fredrickson 1984:480; Kroeber 1925). Large and small game was plentiful in the region. The principal large game species included Columbian black-tailed deer and Roosevelt elk, taken by chasing the animals to the point of exhaustion when they were easier to kill.

The Mattole, Sinkyone, and their neighbors practiced a seasonal migration based on the changing availability of various food resources over the year. In winter, people moved inland along rivers to semi-permanent village sites, often located close to favored fishing spots to take advantage of winter salmon runs. In spring and summer, people would move to the coast or upland to the hills and cooler forests and build small temporary camps where various plant and animal resources would be available. Based on estimates of available food resources, Baumhoff (1958) was able to estimate population and territory size for the Mattole and Sinkyone; see Table 2-3 for a summary that includes Kroeber's (1925) 1910 population estimate while the table itself is adapted from Elsasser (1978).

Table 2-3: Mattole and Sinkyone Population and Territory

GROUP	SQUARE MILES	FISHING MILES	PRE-CONTACT POPULATION ¹	POPULATION DENSITY ¹	1910 POPULATION
Bear River	121	21	1,276	10.5	—
Mattole	219	42	1,200	28.6	—
Lolangkok Sinkyone	254	43	2,076	8.2	100
Shelter Cove Sinkyone	350	67	2,145	6.1	100

¹ Per square mile

Source: Elsasser (1978).

Like virtually all California tribes, the Mattole and Sinkyone were skilled in basketry. Their plain twined technique used hazel, willow, or *Ceanothus* sticks as framework with conifer roots and bear grass to weave as an overlay then wove in patterns of bear grass, maidenhair fern, giant fern, or decorative items such as porcupine quills. Fern dye was made from red alder bark (Elsasser 1978 at 200) while porcupine quills were dyed with Oregon grape roots. A variety of shapes were known, including twined, truncated conical hopper baskets for processing acorns on shallow, slab mortars, conical burden baskets and hats, eeling traps, seed beaters, and small bowls for serving mush.

Re-curved bows and self bows with simple wood arrows were made and used by the Sinkyone and Mattole, as well as with a two-piece arrowshaft smoother. Some arrows may have been used untipped, but were usually tipped with a variety of projectile points including Gunther Barbed, McKee Unifaces, corner-notched, side-notched, or denticulated barbed bifacial points. Wood planks for structures were made from driftwood logs by splitting them with elk horn wedges driven by shaped stone mauls. Shaped conical and flanged groundstone pestles were used. Mush was cooked in baskets using hot stones handled with two stick tongs. Bone awls were used for sewing and the Sinkyone are reported to have had

bone needles with eyes (Elsasser 1978 at 202). Fire was started by means of hand drills of buckeye or willow on willow or alder fire hearths. Dry moss was used as tinder (Elsasser 1978 at 199).

Sinkyone and Mattole people actively managed local resources for a variety of uses. In particular, fire, whether caused by lightning strikes or man-made, had profound effects on the landscape.⁴ Applied to oak woodland habitats in late summer and early fall, fire killed acorn worms that could have infested the next year's crop (Raphael 1974) and cleared the understory of brush, making it easier to gather healthy acorns ready for harvest later in the season. Burning grassy areas and prairies also helped ensure abundant growth the following season, both for food seed and as open grassland for deer and elk habitat, and helped maintain bulbs, corms, and tubers used as food.

Most storage, cooking, and food processing implements, as well as nets, snares, and weirs used for fishing and hunting, were woven of plant material. The variety of plants used to construct baskets is extensive: willow, hazel, huckleberry, beargrass, wild iris, sugar pine roots, ferns, vines, grass stalks, and rhizomes from many different forbs, grasses, sedges, and rushes (BLM 1995). Collecting these items required active manipulation of each plant source to produce quality construction materials, usually young growth or shoots that were strong yet still pliable enough to weave. Techniques used to produce the desired materials included burning, pruning, and coppicing shrubs to encourage sprouting of straight shoots, as well as burning and pruning grasses to produce long straight stalks and to remove old plant material. These uses shaped the resources of the King Range to reflect the residents' cultural preferences and values, and many of these impacts on the landscape are still visible in the present-day, usually localized in areas of consistent, long-term (although often seasonal) use and habitation.

2.3.3.2 Euro-American Settlement and Development

Spanish ships may have stopped briefly along the North Coast as far back as the 1570s; Vizcaino, a Spanish explorer of the 1600s is credited with naming the point at Shelter Cove "Punta Del Gada." The first documented explorations from sea, however, took place in the early 1800s with Russian, American, and British fur trappers and traders searching particularly for sea otter. The first overland explorer was Jedediah Smith who visited the area in 1828, but Humboldt Bay was not truly "discovered" until the Josiah Gregg party made their way from the gold fields of Shasta and Redding onto the North Spit in 1849, looking for the Trinity River's outlet to the Pacific Ocean. The North Coast's timber industry sprang up almost immediately in 1851, initially supplying lumber to the gold mines. By 1880, the area's valuable redwood lumber was being shipped to all parts of the world and timber dominated the regional economy.

The immediate vicinity of the King Range, however, was not settled as densely as other parts of the North Coast region, and was never dominated by a single industry. The organized timber industry largely passed it by, due to the lack of redwood forests and the relative inaccessibility. Settlers first entered the Shelter Cove area to the south (Machi 1984) and the vicinity of present day Petrolia along the Mattole River to the north (Clark 1982; Eastman 1995) in the early 1850s. Many early ranchers raised cattle as well as sheep for mutton and wool to supply the Gold Rush market. These settlers often burned their

⁴ Recent research suggests that the majority of California's coastal prairie habitat was primarily anthropogenic in origin, from local tribes burning areas regularly; after European settlement, many of these areas quickly reverted to woody vegetation (Bicknell 1992).

lands repeatedly to enhance livestock forage and maintain existing openings, which echoed the earlier Indian practices of burning. Early settlers cut timber from their lands for their own use, grew their own produce, and often approached something like self-sufficiency, with a strong emphasis on their own independence (Machi 1984; Raphael 1974).

Other uses of the landscape quickly developed as well; the local dairy industry began with a creamery in Petrolia, mostly producing butter; later the dairy industry became more concentrated around Ferndale to the north. An orchard industry was started by an entrepreneur named Albert Etter in 1861, creating the small town of Ettersburg. Remnants of old orchards can still be found on homestead ruins throughout the King Range. Oil was also discovered in the Mattole region, giving Petrolia its distinctive name, and at one time supported as many as fifty companies prospecting in the area, but the oil boom was short-lived as deposits proved unprofitable to exploit. Up around Eureka and locally around Shelter Cove, fishing became a major economic enterprise by the 1880s, particularly for salmon.



Bark was stripped from area tanoaks and used to produce tannins for the leather industry.

Around the turn of the century a tanbark industry emerged with one center at Briceland, another at Bear Harbor in the Sinkyone Wilderness, and a third at the mouth of the Mattole River. Bark was stripped from tanoak trees and used to produce tannins for processing leather. Wharfs and rail systems for shipping tanbark to the San Francisco market were built by Calvin Stewart's companies at Bear Harbor and at the Mattole River (Mattole Lumber Company) with offices in Petrolia. Shipping facilities at Shelter Cove focused on fishing and exporting wool but shipped tanbark from Briceland as well. However, the tanbark industry dwindled by 1940 after a cheaper and faster method of tanning leather was invented. This had a distinct effect on local populations; in 1900 there were 675 people living in the Mattole, but by 1940 their numbers had dwindled by half (Roscoe 1977).

2.3.3.3 Recent Regional History

The region's timber industry shifted dramatically around World War II, when mechanized logging, using bulldozers or "Cats," became common practice, and Douglas fir lumber jumped in demand to meet the post-war national housing boom (Clawson 1979). Huge areas of Douglas fir were cut in the 1940s and

'50s to meet the market demand, even in areas like the King Range that were formerly considered inaccessible but could now be harvested using mechanized equipment. Unlike the earlier industrialized redwood boom, at the outset most old-growth Douglas fir was owned by small landholders, cut using independent logging crews, and contracted to independently-owned mills. The influx of loggers created another economic boom for the area; Humboldt County was the largest timber producer in the state in 1940, and from 1940-60 the county's population more than doubled (Criley 2003). Even the tiny town of Whitethorn had five mills operating at one time and a population close to a thousand people (Raphael 1974, at 119).⁵

This had a noticeable effect on local land markets, as formerly worthless forested lands were suddenly considered valuable, and hence triggered higher property taxes on both the land and the standing timber itself (Vaux 1955).⁶ To meet the additional tax burden, ranchers often had to sell their timber rights, or their extra acres, some of which were then subdivided for home sites. A 1956 survey of fir sellers found that two-thirds of non-industrial owners sold timber to get cash or to convert to grazing use (Vaux and Hofsted 1956). This process resulted in large swathes of clear-cut or "high-graded" (taking the largest trees and leaving smaller ones behind) land in a multitude of ownerships, with little attention given to reseedling or long-term sustainability (Pine 1956). The availability of timber also drew larger firms into the area, and lumber production reached an all-time peak in Humboldt County in 1959 (Criley 2003). Once the timber was gone, some ranchers maintained the grass that grew in place of the trees by burning. The pastures generally did not last long, though; many cut-over Douglas fir forests grew back mostly in tanoak, which is now considered a weed tree.

This intensive and accelerated harvesting of Douglas fir left an extensive legacy on the landscape. A study in 1968 showed that coverage by hardwoods, mainly tanoak, had increased significantly as a result of timber harvest practices (Oswald 1968).⁷ In addition, erosion from poorly-constructed logging roads and the lack of reforestation contributed to greatly increased sediment loads in the region's rivers, leaving streams shallower, warmer, and more prone to flooding (Bodin, Brock et al. 1982; Raphael 1974). This condition proved disastrous in the winters of 1955 and 1964, when heavy rains caused immense flooding along the entire North Coast. Combined with river diversion projects and an increasingly active fishing industry, the eroded character of cut-over lands also had devastating effects on local anadromous fish populations, with salmon and steelhead runs shrinking to roughly one-third their historic sizes by the 1960s.

The timber boom of the 1940s and '50s had other effects as well. Between 1965 and 1982 the amount of agricultural and forest land in Humboldt County dropped by 87,000 acres as lands were subdivided into 20- or 80-acre parcels (Hight 2000).⁸ The buyers were mostly "back-to-the-landers," people from the counter-culture or "hippie" movements of urban California, often buying lands in poor condition for

⁵ Raphael notes that many of the newcomers were "Okies—dispossessed farmers from the Dust Bowl who looked for jobs wherever they could find them." This caused some tension with the older, more established settlers, who saw the newcomers as economic competitors.

⁶ Tax laws changed in 1946 to apply to total acreage, regardless of whether land was in timber or grassland, and so the value of the standing timber was then calculated as part of the overall value of the property (BLM 1996).

⁷ Of cutover areas in Humboldt County, hardwood species covered 53 percent of the area, compared to only 28 percent of areas where no cutting had occurred. Areas that had been "high-graded" had hardwood cover as high as 60 percent.

⁸ Note this includes both parcels sold to "back-to-landers" plus the subdivision of Shelter Cove.

cheap prices (Anders 1990; Raphael 1974).⁹ This back-to-the-land movement was centered in the southern part of Humboldt County; from 1970-80, the population of the Garberville census tract nearly doubled (Criley 2003). Researcher Jentri Anders describes the motivation of these self-titled “new settlers” as a “desire to relearn how to live on the land in a way that would meet minimal human needs without causing permanent damage to the natural environment” (BLM 1996). Many built their own homes, chopped their own wood, and grew their own food in an attempt to be as self-sufficient as possible. Not everyone who tried it, stayed—the winters in particular can be harsh, with near-constant rain and cold—but those who stuck it out were dedicated to their particular lifestyle and the philosophies that informed it.¹⁰ In particular, many of them espoused an early ecological consciousness, forming local grassroots organizations like the Mattole Restoration Council which focuses on fisheries health and watershed restoration (House 1999).

2.3.4 Current-day Social and Cultural Context

In the King Range and adjacent areas, there are various communities of place and interest that interact in a variety of complex ways, both among one another and with the BLM. Such sociocultural entities can be tightly circumscribed geographically, in the case of small villages, or widely distributed over the landscape as in the logging or ranching community. Some of these groups obtain a sense of community from their physical proximity and frequent interactions; others get it from their shared world view, common interests, or experiences. This section describes both communities of place, the local towns surrounding the King Range, as well as communities of interest: the Native American community, the ranching community, and so on. In an attempt to present reasonably systematic information, each group will be briefly described in terms of similar attributes: demographic composition, geography, sense of identity, sense of place, key values, lifestyle, community cohesive factors, orientation toward the natural environment and the ways the community views and interacts with the KRNCA. Time and space constraints will limit the discussion to major groups.

2.3.4.1 *Communities of Place*

As described earlier, a number of small communities are located just outside the KRNCA boundary, starting with Petrolia to the north, and Honeydew, Ettersburg, Whale Gulch, and Whitethorn/Thorn Junction dotted along the eastern edge. In contrast, the residential development at Shelter Cove is located on the coast, surrounded by the ocean on one side and the King Range on the other. The communities of Garberville and Redway lie further inland along the Highway 101 corridor to the east of Thorn Junction, while Ferndale is farther north of Petrolia (see Figure 2-3). These communities share a powerful identification with the area as a distinct geographic and cultural region, almost as a separate part of California—referred to alternately as the North Coast, the Lost Coast, or “behind the redwood curtain.”

⁹ Anders (1990) asserts that the reason most of the “back-to-the-landers” could afford to buy the subdivided tracts is precisely because the land was in too poor of condition to use for anything else.

¹⁰ Raphael notes that “Most of the old-time residents feel threatened by the most recent invasion of newcomers, just as they did by the arrival of the Okies in the late ‘30s.” However, he makes the distinction that hippies were not a threat economically; in contrast, they brought more money into the local economy. The old-time residents often disliked them more for social reasons, not being comfortable with the counter-culture aspects of their lifestyles (Raphael 1974, at 169).



The Cape Mendocino Lighthouse, located on BLM lands in Mal Coombs Park, has become a community symbol for Shelter Cove.

There is a split between the communities closest to the King Range in terms of their connection to the KRNCA and sense of community character. On the coast, Shelter Cove has more of a tourism focus and hence a more direct economic relationship to the KRNCA. In contrast, the Mattole Valley communities of Whitethorn, Petrolia, and Honeydew seem to base much of their community identity to their isolation, and are not always receptive to outsiders. A number of people from these communities expressed concerns during Scoping about the possible effects of this plan update on local community character, not wanting to become “gateways” to the KRNCA.

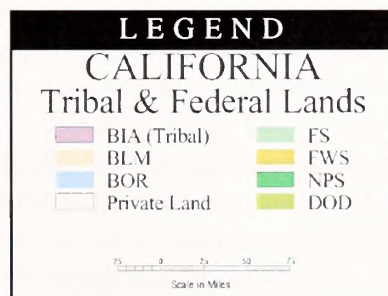
Unlike the towns that are closest to the King Range, Garberville and Redway are more closely linked to the Highway 101 corridor, with its north-south flow of traffic. Most of the tourists who pass through are focused on Redwoods State Park; the King Range is a substantial detour off the 101 corridor, and so gets fewer visitors who are just exploring off the main highway. Ferndale is similarly more tourism oriented, as well as a center of the remaining dairy industry in Humboldt County; its scenic main street, with a number of well-maintained Victorian houses and storefronts, has been used as the backdrop for several movies.

The KRNCA has a high degree of engagement with adjacent communities, particularly in the context of ongoing cooperative relationships/involvements with local non-profit groups, who are actively engaged in environmental restoration and resource management issues. The relationship between the BLM and the communities for the most part is a positive one. In particular, the Mattole watershed and its associated communities seem to be of a manageable scale and size for community organizing and involvement, which over the years has gradually come to foster a willingness to accommodate different perspectives among neighbors (House 1999).

2.3.4.2 Communities of Interest

Native Americans

As mentioned previously, most of the indigenous peoples from what is now the KRNCA and the immediate surroundings succumbed to disease or died at the hands of Euro-American settlers in the 1850s. Most of the few who survived this time were placed on reservations. Small remnant populations reside in urban areas such as Eureka and on rancherias and reservations scattered throughout the region (Figure 2-5).



No Scale

Figure 2-5
Reservations and Rancheria Locations

Regional reservations and rancherias in the vicinity of the King Range area are Big Lagoon Rancheria some 70 miles north of the KRNCA; Trinidad Rancheria and Hoopa Valley Reservation, both approximately 60 miles north; Blue Lake Rancheria approximately 50 miles north; Table Bluff Reservation approximately 30 miles north; Bear River Band of Rohnerville Rancheria approximately 25 miles north; Round Valley Indian Reservation some 25 miles southeast; Laytonville Rancheria approximately 30 miles southeast; and Sherwood Rancheria some 40 miles southeast. The Hoopa Valley and Round Valley Reservations are among the largest reservations in California, while the others are quite small.

The Bear River Band is enrolled on the Rohnerville Rancheria. The total enrollment was estimated at 12,862 in 1999 by the U.S. Department of Health and Human Services, but most do not live on the Rancheria. This group has a special relationship to the KRNCA as the closest federally recognized tribe, and consults with the BLM on a regular basis on a variety of management issues, including NAGPRA issues.¹¹ Several persons on the Rohnerville Rancheria can trace their families to the Mattole area, and there are still a few Indian allotments belonging to Mattole descendants near Prosper Ridge near the north end of the KRNCA.

There is a distinct connection with the land among Native people that forms part of their sense of identity. Among the Sinkyone and Mattole, village and place names were often synonymous; a special bond to the land was evident. Although they no longer live in the King Range as a functioning, independent society, local natives retain traditional ties to the area. Key values among the Native Americans of the region include a sense of loss over the massive transformations that have engulfed the natural world, along with a desire to maintain connections with the local landscape, particular resources within that landscape, and a continuity of use in the context of specific traditional or group practices. A number of writers have noted that the prevailing feeling of local Native Americans toward destruction of natural resources by non-Natives is more often sadness than anger, as exemplified in the following quote:

One of the three local Indians to survive into the days of the tanbark boom told of a visit from Nagaicho, the Sinkyone Creator. Nagaicho had looked at the area around Briceland and remarked sadly, 'It looks just like my people lying around, lying around with all their skin cut off' (Raphael 1974:92).

While there is little substantial data, it would appear likely that the lifestyle of surviving Sinkyone and Mattole is similar to other people of moderate means in the area (Smith 2003). Trips to the beach are popular for picnics, beachcombing, and general recreation. Fishing and hunting are also popular. The Bear River people view the KRNCA as a valuable natural area (Smith 2003). Some Native people use the area for traditional collecting of acorns and other food plants, medicinal herbs, and basketry and other craft materials.

Contemporary Native American use of natural resources in the King Range also continues through cooperative programs with the BLM in addition to individual or informal small group use. In particular,

¹¹ Native American Graves Protection and Repatriation Act (NAGPRA) affirms the rights of Indian tribes and Native Hawaiian entities to custody of Native American human remains, funerary objects, sacred objects, and objects of cultural patrimony with which they are culturally affiliated. It directs federal agencies and museums (that is, museums receiving federal funding) to inventory their collections for these items and to attempt to identify their cultural affiliation. It also directs the agencies and museums to return these items to the affiliated Indian tribes or Native Hawaiians that request them.

the KRNCA represents a valuable set of resources that can be accessed by even urban Native Americans in a way that is different from other parts of the region that are either in private hands or within the sphere of influence of geographically established tribal entities. It provides land and resources for those who have none of their own, which may allow some to continue cultural practices and uses that otherwise would be lost.

Ranchers and Similar Working Landowners

As discussed in Section 2.3.3.2, ranching began in the Humboldt Bay area during the Gold Rush era. By the early twentieth century there were considerable numbers of small, relatively self-sufficient homesteads in the KRNCA vicinity; virtually all of these ran some cattle and/or sheep; some ran a few hundred head (Raphael 1974:102).¹² These homesteads did not have electricity, and lacked the practical means for preserving hundreds of pounds of beef, so typically they did not butcher, but rather drove cattle to markets. Many of the earliest homesteads are no longer functioning farms; some have been abandoned, or have been subdivided into smaller parcels with second homes, or homes for people who commute to wage labor elsewhere. Most ranchers currently make a living harvesting a variety of resources from their lands, not just cattle. The experience of the French family of Ettersburg may be typical (French 2002:3):

Until the mid-1980s we raised mostly sheep, but with the ideas prevalent today, pressure to leave the wild animals alone and have little or no predator controls, raising sheep is no longer feasible. Uncontrolled dogs are almost a bigger problem. We now raise more cattle, which only bring in enough money to pay property taxes. The rest of the ranch income is from timber operations. In order to keep this property, ranch income has always had to be supplemented by other work... The pressures on ranchers today make it ever harder to earn a living off the land. We would like to see this property that took so much effort to put together, be able to remain a large land holding for future generations. Open land tracts are becoming more scarce and we feel that this would be a great loss to the environment as well as to our family.

The sense of place and identity with the land are very strong among the remaining working landowners. Many feel under pressure by the increased environmental regulation on the one hand and the increasing tax burdens and other financial pressures to sell off and subdivide their land—a prospect virtually all ranchers are very reluctant to do, as their land usually has, like the French's, been in their family for many generations. At a regional scale, many worry about too much productive agricultural land being converted to either subdivisions of public ownership.

"Back to Landers" or "New Settlers"

As described earlier, in the late 1960s a substantial number of "back to the landers" moved into the King Range area, buying cut-over lands that had recently been subdivided. This group came to call themselves "new settlers," in contrast to older, more established families. They were often young and interested in

¹² Even where there has been a relative continuity of use, area ranching has seen a number of trends of change over time. Prior to the tanbark boom and bust in the early twentieth century, almost all homesteaders and ranchers kept hogs. Many produced hams and bacon for income. The hogs thrived on acorns, but raising hogs became less viable after many tanoak trees were harvested for their tannin. Sheep ranching then became the economic mainstay of the area. Later, cattle would become relatively more important than sheep, due in part to changes in regulations regarding predator control that made raising sheep problematic.

the counter-culture movement. Importantly, ideas about their relationship to the surrounding landscape and environment was often the primary purpose for moving to the area, as part of a powerful motivation to get away from urban life, simplifying their existence, and having a much more direct relationship with the natural world. Many of the initial group of “new settlers” have stayed and established roots of their own, and today are generally involved with local veterans associations and other civic activities, including local environmental organizations (House 1999).

Initially, the old and new settlers clashed over ideas and lifestyles. However, both groups highly value independence and personal freedom; neither wants anyone looking over their shoulder or telling them how to live their lives. After living in close proximity for 30-40 years, the boundaries between these communities are increasingly blurred; their kids attend school together, get married, and have kids of their own, intermingling their backgrounds and values. Some “new settlers” have taken up ranching, while some “old settlers” have adopted ideas or practices of the back-to-the-landers. In part due to their 20-plus year history of working together on salmon restoration efforts, residents of the Mattole Valley have made great strides in terms of coexisting and working together to solve issues of mutual interest.

Once thought of solely as an activity of the “new settlers,” the marijuana culture and underground economy of northwest California has crossed social and political boundaries as the economics of ranching and logging have changed, much as old settler and new settler cultures have intermixed. The marijuana economy is the current “boom” phase of a historic boom and bust cycle characteristic of the rural North Coast, and is as much an element of local cultural identity as the logging, ranching, and fishing industries. Whatever its actual contribution to the economy of the region, the marijuana culture and economy plays a significant role in relationships among the “communities of interest” that interact around the KRNCA. Although not the overriding factor in all relationships within these communities of interest, the marijuana culture and economy does exist as a major socio-economic factor in the region.

Tourism Business Community

The major tourist communities in the vicinity of the King Range are Ferndale (30 miles north), Garberville/Redway 20 miles east along the U.S. 101 Corridor, and Shelter Cove, a subdivision along the southern coast of the KRNCA. These communities actively promote themselves as tourist destinations and host numerous festivals, concerts, and other events to attract visitors. Shelter Cove offers bed-and-breakfast lodging, restaurants, sport fishing operations, beaches, and campgrounds, and is the main commercial tourism services provider immediately adjacent to the KRNCA. Other communities around the perimeter of the KRNCA (e.g., Whitethorn, Briceland, Ettersburg, Honeydew, and Petrolia) lack large-scale tourism oriented services, although general stores and small lodging operations are partially dependent on area visitors.

The main route into Shelter Cove is on Highway 101 through Garberville, then west on Briceland-Thorn Road through Redway, Briceland, and Thorn Junction. While there is little formal data on the views of residents of these small communities toward tourists, it is clear that tensions exist among residents of the smaller communities, based on comments from public scoping and in writings on the area. The very qualities that make the Lost Coast attractive to residents also bring visitors to the area. The towering redwoods, pristine beaches, majestic mountain scenery, and slow-paced rural character are all very attractive attributes. On the positive side, local residents are able to enjoy world-class natural features and back-yard public land amenities such as hiking trails, campgrounds, and scenic drives that are

supported by state and federal funds and that many visitors must travel for hundreds or thousands of miles to experience. On the negative side, residents must endure traffic, loss of privacy, trespass, and other problems associated with visitor destination areas. There is a great deal of local concern and consensus about protecting the area's qualities from overdevelopment and overuse, and retaining the region's character and sense of place as "the Lost Coast." The specifics on what constitutes overdevelopment or overuse are harder to find agreement upon.



Southern Humboldt County depends on tourism as a major component of the area economy.

Non-Tourist Business Community

There are also some widely scattered small retail businesses in the small communities surrounding the KRNCA, in and around such places as Whitethorn, Honeydew, and Petrolia. Each of these small settlements has a small general store which provides groceries and other supplies to local residents and visitors. The King Range area also hosts many small cottage industries and art studios, ranging from wineries to organic farms to candle makers to silk screening to potters. Some of these businesses are partly dependent on area tourists, but in general they market products outside of the immediate area.

2.3.5 Minority and Low-Income Populations

2.3.5.1 Background and Applicable Regulatory Guidance

"Environmental justice" refers to the fair and equitable treatment of individuals regardless of race ethnicity, or income level, in the development and implementation of environmental management policies and actions. In February 1994, President Clinton issued Executive Order (EO) 12898, "Federal Actions to Address Environmental Justice in Minority Populations and Low Income Populations." The objective of this EO is to require each federal agency to "make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health

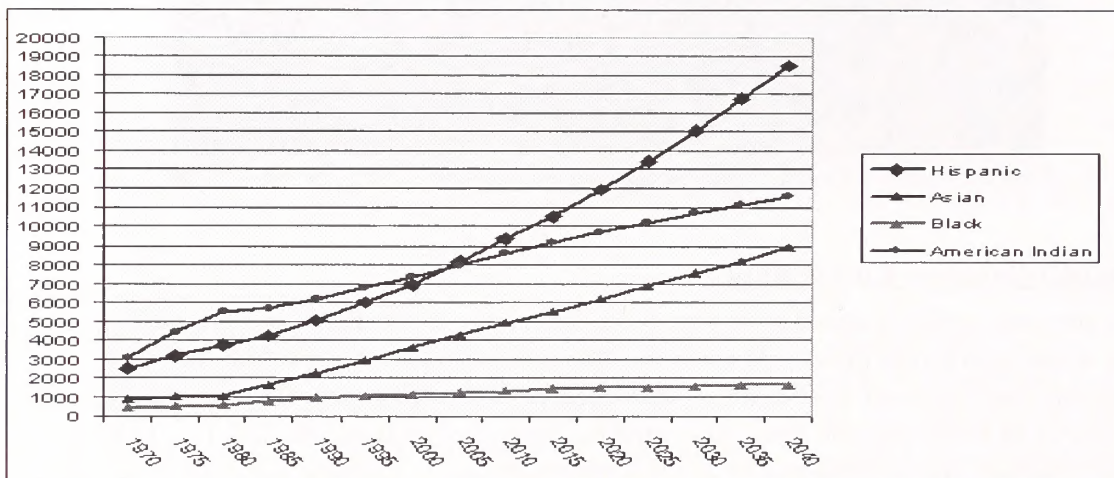
or environmental effects of its programs, policies, and activities on minority populations and low income populations (Council on Environmental Quality 1997).

The EO was accompanied by a memorandum which emphasized the importance of the National Environmental Policy Act (NEPA) as a means for implementing environmental justice principles. The memorandum directs federal agencies to analyze the environmental effects, including human health, social, and economic concerns, of their actions where such analysis is required by NEPA.

2.3.5.2 Regional Context

Data and projections from the CA Department of Finance show that minority populations in Humboldt County have been increasing since the KRNCA was established in 1970, and will continue to grow over the life of the plan (Figure 2-6). However, minority populations still make up only 15 percent of the county population compared to over 50 percent for the state as a whole. Humboldt County has been impacted greatly by the loss of jobs in the timber industry, and Census 2000 data for poverty levels show that low-income populations make up a larger proportion of the county population than the state as a whole (19.5 percent for Humboldt County vs. 14.2 percent for California).

FIGURE 2-6: HUMBOLDT COUNTY MINORITY POPULATION FROM 1970 PROJECTED TO 2040



Source: CA Department of Finance Table, Humboldt County Planning Division Web Site (www.co.humboldt.ca.us/planning)

2.3.5.3 Use of the KRNCA by Low Income and Minority Populations

Very limited data is available on the ethnicity of users of KRNCA resources and programs. A visitor use study completed in the summer of 1990 indicated that very few minority groups accessed the KRNCA for outdoor recreation use. At that time 96 percent of KRNCA recreation visitors were white, followed by 2.3 percent Asian and 0.5 percent Hispanic and 0.5 percent Native American. No detailed income data was collected as part of the study. A more recent survey (2003), focused on the Lost Coast Trail, showed a slight increase in minority population use of the area. This survey breakdown was as follows: 87.8 percent white, 4.3 percent Asian, 4.0 percent Native American, 3.2 percent Hispanic, 1.8 percent Hawaiian, and 1.1 percent black.

Among local minority populations, Southeast Asian immigrants are known to use KRNCA regularly for hunting and special forest products gathering (the 1990 and 2003 visitor surveys did not reflect these users since they tend to access the KRNCA primarily in the late fall months). These users come primarily from Eureka, but also from Central Valley communities such as Sacramento and Modesto. Over 90 percent of the commercial mushroom permittees in the KRNCA have Southeast Asian surnames.

Political autonomy and social self-reliance are central to the Hmong sense of ethnic identity, stemming in part from their recent history of persecution and forced migration. Based on this context, efforts made by BLM to incorporate Hmong input into land use planning may be met with reluctance or hesitation, in part due to residual mistrust of government. Nevertheless, this does not mean that Hmong residents do not want to be recognized as a unique social group.

On the contrary, Hmong refugees have a strong will to survive as a distinct people (Chai 1999:33). Collectivism is one of the most important values in traditional Hmong and Laotian communities (Chai 1999:40). Unfortunately, programs designed to help integrate Hmong refugees into mainstream American culture and provide access to social services were poorly developed. As a result, opportunities for education and employment for refugee families are limited and many of these families rely on public assistance. Furthermore, there is very little existing community framework in northwestern California for Hmong residents to become active in local decision-making, which has marginalized their needs.

In summary, the experience of the Laotian and Hmong cultures as refugees has resulted in their mistrust of government, which has led to limited communication of their needs and preferences for public land management. In the past, the BLM has had very little direct contact with the Hmong/Laotian communities other than the issuance of permits and intermittent field contact for permit compliance. An effort has been initiated through local community organizations to obtain input from these groups for the current planning process.

2.3.5.4 Existing BLM Participation in Economic Assistance Programs

The Northwest Economic Adjustment Initiative was designed in response to the Northwest Forest Plan to assist workers, businesses, tribes, and communities in Washington, Oregon, and northern California affected by reductions in timber harvests. The Jobs-in-the-Woods component of this initiative improves ecosystem health while at the same time providing economic assistance to local communities.

Since 1995, the Arcata Field Office has developed cooperative agreements with local non-profit organizations as part of the Jobs-in-the-Woods program. These include stewardship projects for watershed restoration activities, trail maintenance, and restoration planning. The Jobs-in-the-Woods program has been successful in providing employment in economically depressed regions and employment sectors of the county.

From 1994-2003 the BLM has provided 1.6 million dollars in funding, primarily through the Jobs-in-the-Woods program, to accomplish restoration, interpretive and other resource management projects in the KRNCA. Much of the watershed restoration work in the King Range has been completed through this program. However, no data is available to determine specific impacts to low income or minority populations.

2.3.6 Economic Context

This section describes existing economic conditions surrounding the KRNCA to provide a baseline for assessing the potential impacts of the RMP alternatives. For example, the BLM can affect local employment and income conditions not only by changing the way it manages natural resources or grazing allotments, but also by helping fund or create new vegetation management or restoration-related programs or projects. The construction of new recreation trails or facilities, road maintenance and other activities also can affect some of the socioeconomic conditions described in this section. The BLM can also influence local economic conditions indirectly by pursuing new management strategies that alter future visitation levels, thus affecting total future spending by recreationists and other visitors. Demographics and selected economic indicators of social well-being are also presented to help provide context and put local conditions in perspective relative to statewide conditions.

2.3.6.1 Demographic and Economic Indicators of Social Well-Being

Population

While Shelter Cove has had some notable population growth in recent years, population growth in other local communities has been low to moderate. However, regional and statewide populations are expected to continue to grow at a substantial rate, resulting in increasing demand for the diverse and unique attributes of the Lost Coast and King Range. The visitor base for KRNCA is primarily non-locals, with many visitors from the Sacramento Valley and San Francisco Bay Area; approximately 75 percent of Lost Coast Trail visitors travel more than 100 miles to visit the KRNCA (Martin and Widner 1998; BLM Trailhead Register Data). As a result, population estimates presented in this section include the local study area (Humboldt County), counties in the greater Sacramento region (Sacramento and San Joaquin Counties), and counties in the Bay-Delta region (Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, Solano, and Sonoma Counties). Given the important influence future population growth has on KRNCA visitation and resources, BLM must carefully plan for the population projections summarized below.

Table 2-4 shows historic population growth in the region and the State (there are no incorporated cities in the local study area, and all local communities are included in data provided at the county level). The counties in the greater Sacramento and Bay-Delta regions are collectively referred to as urban northern California. Table 2-5 presents population projections through the year 2040.

In total, the current (2002) population in Humboldt County is approximately 127,700 people. Humboldt County has a high percentage of its population living in unincorporated areas, roughly 53 percent in 2000 (CDOF 2002a). An additional 8.8 million people live in urban northern California and 35 million people in the State as a whole.

Historically, population shifts in the North Coast have been closely tied to changes in the timber industry, but since 1970 or so this relationship has become more complex due to the diversifying economy of the region. From 1970 to 2002, population growth in Humboldt County (28 percent) lagged behind urban northern California (59 percent) and the State (75.4 percent). This pattern also holds in recent years; between 2000 and 2002, population growth in Humboldt County (0.9 percent) was approximately less than one-third of urban northern California (3.0 percent) and the State (3.4 percent). Although

population growth in Humboldt County has been relatively low, it is apparent the population base served by the KRNCA has grown considerably over the past three decades.

Table 2-4: Historic and Current Population Levels ¹

AREA	1970	1980	1990	2000	2002
Humboldt County	99,692 (—)	108,525 (8.9%)	119,118 (9.8%)	126,518 (6.2%)	127,676 (0.9%)
Urban Northern CA ²	5,556,022 (—)	6,310,482 (13.6%)	7,541,994 (19.5%)	8,570,857 (13.6%)	8,829,076 (3.0%)
State of CA	19,971,069 (—)	23,668,562 (18.5%)	29,758,213 (25.7%)	33,871,648 (13.8%)	35,037,196 (3.4%)

¹ Percentage increases are in parentheses and represent total percentage change from previous period.

² Represents Alameda, Contra Costa, Marin, Napa, Sacramento, San Francisco, San Joaquin, San Mateo, Santa Clara, Solano, and Sonoma counties

Source: California Department of Finance 2002a, 2002b, 2003a, 2003b

Table 2-5: Population Projections ¹

AREA	2010	2020	2030	2040
Humboldt County	135,602 (6.2%)	141,092 (4.1%)	145,099 (2.8%)	146,933 (1.3%)
Urban Nor. CA ²	9,887,674 (12.0%)	10,829,950 (9.5%)	11,872,584 (9.6%)	12,879,012 (8.5%)
State of CA	39,957,616 (14.0%)	45,448,627 (13.7%)	51,868,655 (14.1%)	58,731,006 (13.2%)

¹ Percentage increases are in parentheses and represent total percentage change from previous period. For the year 2010, it represents change from 2002.

² Represents Alameda, Contra Costa, Marin, Napa, Sacramento, San Francisco, San Joaquin, San Mateo, Santa Clara, Solano, and Sonoma counties.

Source: California Department of Finance 1998

Future population growth in Humboldt County is expected to remain moderate, with just over 20,000 new residents expected through 2040 relative to year 2000 conditions; this represents a population increase of 16 percent over the next forty years. During this same period, population growth in urban northern California and the State is projected to be 50 percent and 73 percent, respectively. These data suggests that the immediate region is not likely to experience significant population growth, but that the KRNCA will receive increased use pressure from population growth elsewhere in northern California.

In addition, the demographics of new migrants to the North Coast area have been changing over the past two decades. Historically the area had drawn mostly labor migrants in search of work, particularly in the booming timber industry, but since 1980 in-migration has included more retirees and “equity migrants,” people who sold homes in the skyrocketing real estate markets of the Bay Area, Los Angeles and San Diego during the 1980s and ‘90s and bought ocean-view homes along the North Coast at prices substantially lower than their previous homes’ values but still higher than most locals can afford. The local housing prices are still relatively low (the median home price in Humboldt County in 2001 was \$142,000, compared to a statewide median of \$240,000). However, area home prices have increased

dramatically in recent years, climbing 73% between 1999 and 2003; by July 2003 the median home price had risen to \$215,000, (CICG data, HSU Web Site).

Unemployment

Unemployment levels within a particular area are commonly used as an indicator of the strength of a local economy and social well-being of its population. Table 2-6 presents the size of the labor force and average annual unemployment rates in the local study area, with the State of California included for comparative purposes.

Table 2-6: Unemployment Rates ¹

AREA	1990		2000		2001	
	LABOR FORCE ²	UNEMPLOYMENT RATE	LABOR FORCE ²	UNEMPLOYMENT RATE	LABOR FORCE ²	UNEMPLOYMENT RATE
Humboldt County	56,500	7.9	60,100	6.3	59,100	6.1
State of CA	--	5.8	--	4.9	--	5.3

¹ March 2001 Benchmark

² Represents civilian labor force

Source: California Employment Development Department 2003

In 2001, Humboldt County had an average unemployment rate of 6.1 percent; which is higher than the statewide average (5.3 percent). Unemployment in the region has been steady in recent years, holding at just over 6 percent since 2000, which is considerably lower than historical (1980-1990) conditions, when unemployment sometimes reached as high as 13 percent (CICG data).

Per-Capita Personal Income

Another indicator of social well-being is per-capita personal income.¹³ Table 2-7 shows per-capita personal income (i.e., total personal income divided by population) in the local study area and the State since 1970.

Table 2-7: Per-Capita Personal Income ¹

AREA	1970	1980	1990	2000
Humboldt County	\$17,930	\$20,720	\$21,632	\$23,237
State of CA	\$21,370	\$25,138	\$28,830	\$32,149

¹ Constant dollars (2000); adjusted using CPI inflation factor

Source: Bureau of Economic Analysis 2003

¹³ Personal income is defined as the income that is received by persons from participating in production, from both government and business transfer payments, and from government interest (which is treated like a transfer payment); it is calculated as the sum of wage and salary disbursements, other labor income, proprietors' income with inventory valuation and capital consumption adjustments, rental income of persons with capital consumption adjustment, personal dividend and interest income, and transfer payments to persons, less personal contributions for social insurance (BEA 2003).

Per-capita personal income in Humboldt County has ranged from approximately \$18,000 in 1970 to just over \$23,000 in 2000. However, local income levels have historically been consistently lower than statewide levels. In 2000, per-capita personal income in Humboldt County was 38 percent lower than in the State. Growth in per-capita personal income between 1970 and 2000 in Humboldt County has been roughly 30 percent; this is less than the growth rate in the State (50 percent) over this same 30-year period.

Poverty Rates

An area's poverty rate is an estimate of the percentage of the area's total population living at or below the poverty threshold established by the U.S. Census Bureau. Table 2-8 presents poverty rates in the local study area, with statewide figures included for comparative purposes.

Table 2-8: Poverty Rates ¹

AREA	1989	1999
Humboldt County	17.6%	19.5%
State of CA	12.5%	14.2%

¹ Represents percentage of all people in poverty relative to entire population.

Source: U.S. Department of Agriculture 2003

Poverty rates increased in the local study area and the State between 1989 and 1999. The poverty rate in Humboldt County in 1999 was 19.5 percent, up from 17.6 percent in 1989, and has been consistently higher than statewide rates over time.

2.3.6.2 Regional Economic Base

There are two primary components of the local and regional economic base that are expected to be affected by the management alternatives under consideration—earnings/income and employment. This section presents an overview of the regional economy, including data on earnings/income and employment for Humboldt County.

Total Personal Income and Earnings

As described above, per-capita personal income serves as an indicator of social well-being. Total personal income measures the total income generated throughout an entire area, and could be directly or indirectly affected by changes in the management of KRNCA. Table 2-9 shows absolute levels of total personal income in the local study area between 1980 and 2000. Table 2-10 presents earnings by place of work, which is a component of total personal income. The measure of earnings by place of work is more relevant than total personal income with respect to projecting impacts to an economy's input because it focuses on money earned by businesses (i.e., proprietor's income), wages/salaries of employees, and excludes exogenous inputs such as transfer payments.

Total personal income in Humboldt County in 2000 was nearly \$3 billion dollars, almost three times income levels in 1980. The rate of change in total personal income has been lower in Humboldt County (49 percent) compared to the State (67 percent) since 1990.

In Humboldt County, earnings by place of work totaled nearly \$1.9 billion dollars in 2000, which is approximately 64 percent of total personal income. Of this total, roughly 70 percent is attributed to wage and salary income and 21 percent to business earnings (proprietor's income). Earnings by place of work in Humboldt County have grown by 45 percent since 1990 and have more than doubled since 1980. Since 1990, proprietor's income has outpaced wage and salary income in Humboldt County, rising nearly 98 percent compared to 40 percent.

Table 2-9: Total Personal Income (in thousands of dollars)

AREA	1980	1990	2000
Humboldt County	\$1,080,093	\$1,966,112	\$2,936,028
State of CA	\$286,288,598	\$655,567,167	\$1,093,065,244

Source: Bureau of Economic Analysis, 2003

Table 2-10: Earnings by Place of Work (in thousands of dollars)

EMPLOYMENT TYPE	1980	1990	2000
Wage and Salary	\$546,083	\$950,161	\$1,325,550
Proprietor's Income	\$125,340	\$202,874	\$401,423
Other Labor	\$77,381	\$145,440	\$159,863
Humboldt County (total)	\$748,804	\$1,298,475	\$1,886,836
Wage and Salary	\$164,243,847	\$368,413,384	\$638,795,808
Proprietor's Income	\$26,921,343	\$62,148,804	\$120,226,020
Other Labor	\$22,711,417	\$52,363,733	\$66,202,354
State of CA (total)	\$213,876,607	\$482,925,921	\$825,224,182

Source: Bureau of Economic Analysis, 2003

Employment

Local and regional employment levels could also be directly or indirectly affected by implementation of the updated RMP. Table 2-11 presents absolute levels of employment by industry between 1980 and 2000 for Humboldt County.

The Humboldt County economy supported approximately 69,500 part-time and full-time jobs in 2000. Total employment has increased steadily since 1980, with a 19 percent job growth rate between 1980 and 1990, and 13 percent between 1990 and 2000. In terms of employment by industry in Humboldt County, the leading sectors consist of Services (31 percent), Retail Trade (19 percent), and Government (17 percent). As seen in Table 2-11, this pattern has been fairly consistent since 1980. The prominence of the Services sector, as a percentage of total employment in the County, has grown over time, from 25 percent in 1980 to 31 percent in 2000.

Table 2-11: Employment by Industry in Humboldt County

INDUSTRY	1980	1990	2000
Humboldt County (total)	51,607	61,377	69,448
Farm (Agriculture)	1,262 (2.5%)	1,424 (2.3%)	1,636 (2.4%)
Ag. Services, Forestry and Fishing	1,746 (3.4%)	1,689 (2.8%)	2,178 (3.1%)
Mining	93 (0.2%)	89 (.15%)	N/A ¹
Construction	1,951 (3.8%)	3,544 (5.8%)	3,739 (5.4%)
Manufacturing	7,194 (13.9%)	7,086 (11.5%)	6,980 (10.1%)
Transportation and Public Utilities	2,793 (5.4%)	2,888 (4.7%)	2,495 (3.6%)
Wholesale Trade	1,966 (3.8%)	2,070 (3.4%)	N/A ¹
Retail Trade	9,099 (17.6%)	12,002 (19.6%)	12,997 (18.7%)
Finance, Insurance and Real Estate	3,056 (5.9%)	3,298 (5.4%)	4,571 (6.6%)
Services	12,814 (24.8%)	16,681 (27.2%)	21,173 (30.5%)
Government	9,633 (18.7%)	10,606 (17.3%)	11,817 (17.0%)

¹ Data unavailable to avoid disclosure of confidential information, but the estimates for this item are included in the totals.

Source: Bureau of Economic Analysis, 2003

Shifts in Regional Economic Activity

For over 30 years, Humboldt County has been facing a decline in its resource-based economy, as non-traditional economic sectors become more dominant. Regionally, the economic base continues to shift from resource extraction industries, particularly timber harvesting and processing, to a mixed economy with tourism services representing a major component of the region's existing economy. This trend can be seen in Table 2-12, which presents earnings by industry for selected key industries in Humboldt County since 1980.

Table 2-12 illustrates the increasing importance of tourism and agriculture and the decreasing role of timber in the regional economy. Between 1980 and 2000, earnings in the lumber manufacturing sector have declined approximately 36 percent (in real terms) in Humboldt County; although the forestry sector expanded between 1980 and 1990 (data are not available for 2000). Despite its notable overall decline, logging still plays an important role in the Humboldt County economy outside the KRNCA. For example, lumber-based manufacturing generates roughly 75 percent of the County's total manufacturing income, and 27 percent of the timber produced in the State comes from Humboldt County (Humboldt County 2000). However, due to technological innovations and a reduction in the amount of local timber to be harvested (local mills now import some of the logs they process), timber production is now being done by fewer employees. As noted by one study, lumber-related jobs only accounted for 7.8 percent of employment in Humboldt County in 1997, in contrast to an estimated 50 percent in 1950 (Criley 2003).

During this same period (1980-2000), industry sectors supporting the agricultural and tourism economies have increased in Humboldt County. The agricultural sector declined between 1980 and 1990, but then experienced a significant increase, more than doubling from 1990 to 2000. This is most likely attributable to the close relationship between the agricultural industry and regional and state economies, which were

depressed in 1990, as well as to a relatively higher proportion of farm production expenses relative to gross farm income in 1990. Overall, the agricultural sector has increased by 50 percent in Humboldt County since 1980.

Table 2-12: Regional Trends in Earnings by Industry in Humboldt County
(thousands of dollars) ^{1,2}

INDUSTRY	1980	1990	2000
Agriculture			
Farm Industries	\$33,706	\$12,047	\$33,200
Agricultural Services	\$6,646	\$13,535	\$27,461
Sub-total	\$40,352	\$25,582	\$60,661
Forest Products			
Forestry	\$3,916	\$5,126	NA ³
Lumber and Wood Product Manufacturing	\$263,309	\$198,258	\$169,278
Sub-total	\$267,226	\$203,384	-- ³
Tourism Industry			
Retail Trade	\$199,522	\$228,510	\$241,045
Hotels and other Lodging Places	\$13,268	\$13,231	\$15,533
Amusement and Recreation Services	\$6,775	\$7,614	\$12,601
Sub-total	\$219,565	\$249,354	\$269,179

¹ Constant dollars (2000); adjusted using CPI inflation factor

² Components of earnings include wage and salary disbursements, other labor income, and proprietor's income

³ Data not available in BEA database to avoid disclosure of confidential information; unable to calculate sub-total

Source: Bureau of Economic Analysis, 2003

As part of the agricultural sector, ranching also has historically been an important component of the local area's economy and sense of identity, and this continues today, although agriculture has gone through transformations somewhat similar to the timber industry. Livestock ranching and related products represent 59 percent of the total cash receipts from agricultural sales (including livestock and crops), down from 86 percent in 1980. The dairy industry still represents a substantial portion of Humboldt County agriculture; while it only produces 1 percent of the state's milk, regional demand actually is larger than the four local processors can supply (Hight 2000). Wool production in the region dropped significantly in the 1960s and '70s and remains low, but beef production has actually increased by nearly half since 1980. Both beef and dairy have benefited from a strong "buy local produce" mentality in the North Coast (Criley 2003).

The importance of the tourism industry in Humboldt County has been increasing as the region's economic base has shifted away from resource extraction. The tourism industry consists of a range of retail and service firms, including lodging establishments, restaurants, retail stores, gasoline service stations, and other businesses that sell products and services to travelers, all of which could be affected by RMP alternatives. The tourism industry has experienced a steady increase in the local study area over the last two decades, characterized by an overall increase of 23 percent in Humboldt County between 1980 and 2000. Of the sectors included in the tourism industry, the amusement and recreation sector has

experienced the greatest relative growth over time. Tourism expenditures translate into jobs (and wages/salaries), state and local government sales tax revenues, and state income taxes. According to the California Division of Tourism, there were 1.5 million recreational trips to Humboldt County in 1997. The average expenditure per day (statewide) was \$63.60. Table 2-13 shows the contribution of tourism to the local and State economies.

Table 2-13: Statewide and Regional Trends in Tourism

AREA/CATEGORY	1992	1995	2000
Humboldt County			
Destination Spending (\$million)	214.1	230.0	284.7
Earnings (\$million)	63.2	68.1	82.8
Employment (jobs)	5,780	6,030	6,110
Local Tax Receipts (\$million)	3.4	3.9	4.7
State Tax Receipts (\$million)	9.7	10.5	13.1
State of CA			
Destination Spending (\$billion)	40.1	44.2	66.0
Earnings (\$billion)	16.0	17.5	24.9
Employment (thousands of jobs)	878	935	1,100
Local Tax Receipts (\$billion)	0.9	1.1	1.7
State Tax Receipts (\$billion)	2.0	2.2	3.1

Source: Dean Runyon Associates 2002

In 2000, travelers to the region contributed approximately \$284.7 million to the Humboldt County economy. These spending levels supported 6,110 jobs with total earnings of \$82.8 million in the County. Since 1992, travel spending in Humboldt County has grown at an average of 3.6 percent annually; this is lower than the statewide annual average of 6.4 percent between 1992 and 2000.

2.3.6.3 Components of Local Economic Base

Like the regional economy described in the sections above, the local economy in the immediate vicinity of the King Range has also undergone a major transition, from being heavily dependent on timber extraction to a more diverse economy with a greater dependence on tourism and the development of first and second (vacation) homes. The primary economic activities in the area currently are visitor-related services, ranching, new housing construction (especially in Shelter Cove and the gateway communities of Ferndale and Garberville), commercial and sport fishing out of Shelter Cove, and logging.

There is also an important but hard to measure “underground economy” of marijuana cultivation, particularly in southern Humboldt County, which brings money into the region not only through the sale of marijuana but also through purchase of local goods and services in support of the industry. In the early 1980s, the Redway/Garberville Chamber of Commerce estimated that the marijuana industry represented at least 25 percent of the area’s economy; some more recent estimates put this percentage as high as 75 percent (this estimate is based on anecdotal evidence, as more accurate or scientific estimates are not available; see also Raphael 1985).

In addition to tourism and real estate services and construction, ranching and logging still play important roles in the local economy; within the KRNCA, there are four grazing allotments leased to local ranchers. Logging has not occurred inside the KRNCA boundary since the 1980s but does occur on private property near the KRNCA. A magnesium mine in the local area closed in the early 1960s (see Section 2.2.2, Minerals).

2.3.6.4 Local Economic Activity Affected by KRNCA Management

Recreation Management and Expenditures by Visitors

KRNCA visitation and related recreation activities generates positive income and employment effects in the local economy as visitors spend money on gasoline, lodging, and various supplies, including food and equipment. These expenditures support local employment and generate earnings for local proprietors and employees. Ultimately, these expenditures filter through the local and regional economies, generating indirect jobs and earning growth through what is often referred to as the “multiplier” effect.

Data on direct recreation expenditures is from the U.S. Fish and Wildlife Service’s 2001 *National Survey of Fishing, Hunting, and Wildlife-Associated Recreation*, which was used to estimate expenditures for consumptive recreation activities (i.e., fishing and hunting), and on the U.S. Forest Service’s 1998 *Draft General Technical Report, Developing Expenditure Profiles for Forest Service Recreation Visitors*, which was used for all other recreation activities.

Because the expenditures by non-locals are necessarily higher on a daily basis than expenditures made by locals, and because non-local expenditures bring new dollars into the local economy, and thereby serve to expand the local economy, separate estimates were prepared for both local and non-local visitors. Generally, locals are defined as residents who live within 50 miles of the KRNCA; all other recreationists are considered non-locals.¹⁴ This treatment is consistent with methodology used by the U.S. Forest Service in developing its expenditure profiles, which serves as the basis for the recreation expenditure profiles used in this analysis and by the BLM in assessment of *Employment and Income in the Western U.S. Attributable to BLM Recreation* (2001). The breakdown of local versus non-local visitors at KRNCA is based on the *Final Management Report for 1997 Lost Coast Trail Backcountry Visitor Study*, a report to the BLM prepared by Humboldt State University (Martin and Widner 1998). Origin data from this report serve as a proxy for all recreation visitors, and indicates that 11 percent of visitors traveled less than 50 miles to reach the KRNCA. Therefore, 11 percent of total visitors are considered locals, while the remaining 89 percent are considered non-locals. The number of hours spent pursuing different recreation activities on these visits is translated into Visitor Days, which represent twelve hours of a given activity. This information serves as an effective proxy for estimating resident Visitor Days of 15,930 per year and non-resident Visitor Days of 128,886 per year.

Data on recreation visitation is derived from the BLM’s Recreation Management Information System (RMIS) and professional estimates for dispersed use (see Section 2.13 for more information). Total

¹⁴ This holds true for all recreation activities except for hunting and fishing. Expenditure data for hunting and fishing are based on a State resident versus non-resident basis as presented in the U.S. Fish and Wildlife Service’s 2001 *National Survey of Fishing, Hunting, and Wildlife-Associated Recreation*. It is not possible to determine the number of resident hunters and anglers that live within 50 miles from their destination.

recreation visits to KRNCA, including Special Recreation Permits, are estimated at 129,610 for fiscal year 2002. These total visits yield an estimated total of 144,816 Visitor Days per year.

It is also important to distinguish the types of recreation activities that visitors are participating in to evaluate the economic effects of recreation spending because different activities generate significantly different expenditures. Table 2-14 summarizes recreation use and average expenditure information by activity. Recreation expenditure profiles for locals and non-locals were developed based on existing data sources as described above.¹⁵ All estimates are in 2000 dollars and do not include the non-market values addressed in Section 2.3.6.6 below.

Table 2-14: Economic Impact of Recreation Expenditures at KRNCA

RECREATION ACTIVITY	ANNUAL VISITOR DAYS (LOCAL / NON-LOCAL)	AVERAGE DIRECT EXPENDITURES PER DAY (LOCAL / NON-LOCAL) ¹	TOTAL DIRECT EXPENDITURES ²
Backpacking	8,198 / 66,327	\$10.69 / \$54.45	\$3,699,125
Camping	4,433 / 35,864	\$22.87 / \$37.81	\$1,457,389
Driving for Pleasure	602 / 4,868	\$26.05 / \$71.37	\$363,117
Fishing (freshwater)	16 / 133	\$38.83 / \$67.16	\$9,549
Gathering Non-Commercial Forest Products	98 / 792	\$22.87 / \$50.65	\$42,348
Horseback Riding	771 / 6,237	\$10.69 / \$54.45	\$347,869
Hunting (Big game)	650 / 5,255	\$43.93 / \$131.31	\$718,607
Hiking/Walking	443 / 3,585	\$10.69 / \$54.45	\$199,925
Nature Study	55 / 444	\$22.87 / \$50.65	\$23,769
Picnicking	260 / 2,106	\$22.87 / \$37.81	\$85,596
Photography	53 / 428	\$22.87 / \$50.65	\$22,882
Swimming	122 / 990	\$22.87 / \$37.81	\$40,233
Viewing Interpretive Exhibits	48 / 387	\$22.87 / \$50.65	\$20,686
Viewing – Other	11 / 85	\$22.87 / \$50.65	\$4,562
Wildlife Viewing	171 / 1,384	\$22.87 / \$50.65	\$73,999
TOTAL	15,930 / 128,886	--	\$7,109,656

¹ Recreation expenditure profiles do not necessarily correspond directly to the specific types of recreation activities occurring at KRNCA. Average expenditures for each activity are based on the most applicable expenditure category.

² Total direct expenditures by recreationists result in direct and indirect income effects to local proprietors and residents.

Applying recreation expenditure estimates to the estimated number of days for each activity yields a total estimate of \$7,109,656 (2000 dollars) for expenditures associated with recreational activities in the

¹⁵ The estimates of direct visitor expenditures are intentionally conservative. BLM visitor days are expressed as 12 hours of a given activity. However, the expenditure data from both the U.S. Forest Service and the U.S. Fish and Wildlife Service are expressed as activity days. Any part of a day spent in a given activity is counted as one activity day. For example, if someone hunted for 6 hours one day and 6 hours another day, it would represent 2 activity days for hunting. However, such use would only represent one 12-hour BLM visitor day. We are not aware of a reliable database to convert visitor days to activity days. As a result, the direct visitor expenditure amounts in this study should be regarded as conservative estimates and therefore actual expenditures may be higher.

planning area; \$265,534 for local visitors, and \$6,844,122 for non-local visitors. This averages about \$49.09 per person, per day.

As indicated above, the visitation data summarized in this section includes activities associated with special use permits. In fiscal year 2001, BLM issued Special Recreation Permits for 36 events serving a total of 1,086 participants. Of these, 14 were commercial permits, which included one local event for Mal Coombs Park, one for ongoing shuttle service, and 12 for Lost Coast backpack trips, totaling 620 participants. The remaining 22 were non-commercial permits, which included three permits for special events (i.e., memorial services and a wedding) and 19 for Lost Coast backpack trips for organized groups. Fees received by BLM for the Special Recreation Permits (commercial permits only) totaled approximately \$7,655. Individual permits for campground use cost \$5 or \$8 depending on the site. Fee receipts from campgrounds totaled \$12,062 in 2002.

Estimated recreation-associated expenditures by individual participants generated by the KRNCA in 2001 totaled \$7,109,656 or \$7.1 million. Direct and indirect economic effects of these expenditures are based on an analysis of recreation-based multipliers prepared by the U.S. Army Corps of Engineers for Lake Mendocino (1999), another North Coast recreation destination.¹⁶ These multipliers estimate effects to the "region," which is defined as all counties within a 30 mile radius of the project. The recreation expenditure-related effects described in this section would primarily be based in Humboldt County, and to a lesser extent in Mendocino County. Other areas would benefit as well; for example, visitors might purchase gasoline or lunch in Marin or Sonoma County as they travel from the San Francisco Bay Area. In total, recreation expenditures are estimated to generate \$2.46 million in direct labor and proprietor income and created or sustained 143.7 jobs (2,000 hour full-time equivalent) as a direct effect. Non-local expenditures totaling \$6,844,122, which bring in new money and contribute to the expansion of the regional economy, generated \$2,371,488 of that total, in new income, and directly created 138.3 new jobs of the 143.7 jobs total. The total direct, indirect, and induced effect of these expenditures on the regional economy amounts to \$4.30 million in income and 197.8 jobs.

Grazing Management

The KRNCA provides livestock grazing opportunities to local ranchers through the administration of cattle grazing leases on public land allotments. These leases generate local income and employment benefits to ranchers and their employees utilizing the KRNCA, and other economic benefits for local County governments, including sales and income tax revenue. In addition, cattle ranching leads to indirect economic effects related to ancillary expenditures made by local ranchers for services and products in the agricultural services industry that help support their ranching businesses. Changes in KRNCA grazing practices could therefore affect the local and regional economy.

Currently, the BLM administers grazing leases to a total of five operators for a total of 2,050 Animal Unit Months (AUMs)¹⁷ annually (see Section 2.10 for additional information regarding KRNCA grazing). The

¹⁶ Direct and indirect income and employment effects are derived from the total recreation expenditures at the KRNCA. Direct income effects are lower than total recreation expenditures because they account for costs associated with providing recreation goods and services. Indirect and induced effects result from the multiplier effect of direct expenditures circulating through the economy.

¹⁷ An AUM is the amount of forage needed by an "animal unit" (AU) grazing for one month, with the animal unit defined as one mature 1,000 pound cow and her calf.

economic value of grazing to potentially affected ranchers, their employees, and the local and regional economies is primarily related to the quantity of cattle supported through the cattle leases and the associated revenues earned and expenditures made to support that level of cattle production.

Information on representative revenues and costs associated with cattle production in Humboldt County was collected to help define related and existing economic conditions related to potentially affected KRNCA cattle grazing. A Beef Production Cost Study for Humboldt County published by the local U.C. Cooperative Extension office (1981) was used for this RMP and EIS and the revenue and cost information from this Humboldt County study was adjusted to current (2000) dollars and compared to other, more recent, typical enterprise budgets for cattle ranching in other parts of California to confirm that the adjusted data was applicable to current conditions.

Using the source cited above, it is estimated that in Humboldt County, gross revenues and expenses (cash costs) associated with a typical 200-cow cattle ranching operation are approximately \$486.71 and \$406.67 per cow (2000 dollars), respectively; therefore, net revenues (or income earned by the rancher) are estimated to be roughly \$80.04 per cow. (Note: these figures exclude family labor and non-cash costs from expenses). The net revenues represent income earned by the rancher and costs represent money input to the local economy, mainly in the agricultural services sector (e.g., feed; veterinary costs and medication; gasoline, oil, and equipment repairs; maintenance; insurance, part-time, non-family labor; dog expense, horse expense, replacement bulls; and other miscellaneous overhead and operating expenses).

Currently, grazing allotments at the KRNCA can support up to a total of approximately a 256-340 cow-calf herd (based on 2,050 AUMs for all potentially affected ranches combined for a season of use between six and eight months). However, on average, grazing levels at KRNCA are lower than capacity, averaging about 220 cows (1,540 AUMs), and in 2002, roughly 1,500 AUMs were grazed supporting roughly 214 cows. Based on this range (214-340 cows) and typical revenues and costs, it is estimated that grazing at KRNCA generates a total of approximately \$104,004 - \$165,240 in annual gross revenues. Expenditures for ancillary services that serve as inputs into the local economy range from \$86,884 - \$138,040; these expenditures also result in sales tax revenues that are realized by state and local county governments. Net income earned by local ranchers ranges between \$17,120 and \$27,200 annually. It is not known how many jobs are supported by grazing at KRNCA. However, grazing would generate some level of direct employment effects (i.e., jobs to ranchers) and secondary job effects as money is circulated through the local and regional economies. The direct and indirect income that is earned also results in income tax revenues for federal, state, and local governments.

Funding Local Conservation Programs

BLM has been actively supporting local conservation programs through direct funding of projects and programs. This funding is a direct input to the local economy. As these funds are spent to implement specific projects, direct and indirect income, employment, and fiscal (tax revenue) benefits are generated.

Historically, the BLM has provided funding to a wide range of non-profit organizations to perform work in the KRNCA, mostly for watershed restoration projects (e.g., road removal/revegetation and other sediment reduction efforts). However, other projects included historic structure restoration, trail and fuel break construction, and other types of vegetation management. Organizations that received funding included several local watershed/fishery restoration groups, volunteer fire departments, county government, a historic preservation society, and an interpretive association. In total, the BLM provided

roughly \$1,620,000 for completion of public land projects to organizations in the communities immediately surrounding the King Range from 1994-2003. This translates into an annual average of about \$162,000.

Specialty Forest Product Management

Some of the resources found within the KRNCA represent specialty forest products that are mostly harvested by local residents. These resources include mushrooms, beargrass, and firewood. The harvesting and subsequent re-sale of these products generates income and could be affected by changes in KRNCA management.

The economic impact of mushroom, beargrass, and firewood harvesting is relatively minor and estimates of the income generated by such harvesting are not available. Much of the harvesting is used for personal use, and while some commercial harvesting takes place, it is highly variable and hard to measure because most of the transactions are cash deals from family-owned operations. However, some permit data is available. In terms of commercial mushroom harvesting, the BLM issues a maximum of thirty permits at one time with no harvest limits. The harvesting season lasts four to six weeks. Beargrass is harvested in the KRNCA for the floral industry. The BLM typically issues ten to twelve permits per year for beargrass harvesting. Lastly, downed timber is sometimes harvested for firewood by local residents and the BLM periodically issues permits for collecting firewood after storm events.

Road and Facility Maintenance and BLM Employment

BLM contracts with local construction companies for road grading activities and janitorial service providers for facility maintenance and clean-up. Such contracting supports jobs and generates income for local service providers. Currently, the BLM is involved in maintenance contracts with local contractors totaling about \$40,000 to \$45,000 per year for janitorial services at the BLM office, campgrounds, and recreation sites as well as for road grading activities.

The BLM employs nine people (not including seasonal employees) at the KRNCA in the Whitethorn office, which includes two permanent fire staff. The local payroll totals approximately \$427,000 per year; including benefits, payroll expenditures total \$521,000 per year.

2.3.6.5 Fiscal Resources and Public Services

Fiscal resources (tax revenue received by government agencies) and related public services could be affected by the RMP. The sections below focus on the major types of fiscal resources and public services that could be affected by the RMP: sales and lodging tax revenues generated by KRNCA visitors, emergency services, and law enforcement. Property values and potential property tax considerations are addressed below. Existing road maintenance activities by local counties and the related MOUs between the counties and BLM are not expected to change as a result of the RMP.

Sales and Lodging Taxes

The major fiscal resources most affected by KRNCA management are visitor sales and lodging tax revenues received by Humboldt County. The RMP will not include major changes in land tenure;

therefore, changes in local government property tax revenues are expected to be minor, and changes in payments-in-lieu of taxes (PILT) (which are currently estimated to be roughly \$500,000 per year) will also be modest.

Existing sales and lodging taxes (i.e., transient occupancy taxes or TOT revenues) could be affected by the RMP, thereby impacting Humboldt County revenues, if the RMP leads to changes in KRNCA visitation levels. In total, over \$13 million in sales revenues were distributed to cities and/or county governments in Humboldt County during the fiscal year 2000-01. Sales tax revenues at the county level grew by 65 percent in Humboldt County between 1990-91 and 2000-01 (State Board of Equalization 1992, 2002).

TOT revenues from sales and lodging taxes have grown considerably in the study area since 1992. In total, nearly \$3 million in TOT revenues were generated in Humboldt County in 2000 (Dean Runyon Associates 2002). TOT revenues have increased in Humboldt County at an average annual rate of 4.6 percent between 1992 and 2000. Local trends in TOT revenues are lower than statewide trends where growth averaged 8.8 percent annually since 1992.

Emergency Services and Law Enforcement

Emergency services and crime control/law enforcement could be affected by the RMP. Emergency services, including search and rescue of hikers and others who need assistance, is provided by the Humboldt and Mendocino County Sheriff Departments, BLM, and for offshore assistance, the U.S. Coast Guard. The Honeydew, Shelter Cove, and Petrolia Volunteer Fire Departments also assist and are often the first people on the scene during search and rescue operations. Existing search and rescue operations typically average five to ten incidents per year under existing conditions and baseline recreation/visitation use. The year 2000 was a notable and tragic year, with four KRNCA visitors dying during two incidents. BLM law enforcement staff, the two county sheriff departments, and Coast Guard also routinely enforce a variety of laws and regulations that are often violated by visitors, including boating safety rules, traffic laws, camping regulations, thefts and vandalism, etc.

The local volunteer fire departments listed above, BLM staff, and the California Division of Forestry and Fire Protection are the primary agencies involved with fire-fighting. The relatively abundant vegetation found in the study area combined with extreme weather conditions, including notable wind and heat during the summer and fall, lead to hazardous fire conditions. (See Section 2.11, Fire Management, for detail on frequency of fire in the King Range.) BLM coordinates its fuel/vegetation management and fire-fighting activities with the local volunteer fire departments, and its cooperative agreements with the local departments total approximately \$4,000 to \$5,000 per year.

2.3.6.6 Other Economic Values (including Non-Market Values)

In addition to the existing economic conditions described in previous sections, it is important to also consider the non-market values of the study area's attributes that may be affected by the RMP's alternatives, including its natural and cultural resources. Unlike gasoline or employee wages, these values either do not have a market or, in the case of property values, do have a market but are difficult to quantify. Nevertheless, such values are important to consider because they help tell the entire economic "story." Despite the difficulties associated with measurement of these values, it is well-accepted that the

natural and cultural resources of an area, and the open space the area may provide, can have a dollar value. For example, it is common for real estate investors to pay more for view lots or property adjacent to open space, or for people to make financial donations to help protect old-growth forests, endangered species, or other sensitive resources.

Non-market values consist of “use values” and “non-use values.” Use values are the dollar values of those benefits derived from the direct utilization of the resource area (e.g., hiking, hunting, general nature appreciation, etc.). Economists measure the non-market component of use values by estimating the consumer surplus associated with these activities, which is defined as the maximum dollar amount above the actual market price that a consumer would be willing to pay to enjoy a good or service. The market component of use values is relatively easy to measure, via expenditures by recreationists; however, not all goods and services provided by KRNCA have market values. Non-use values refer to the benefits derived from the mere presence of the KRNCA as open space, or from the protection of related resources. Such values typically have two components: option values and existence values. Option value represents the benefits from having these properties available for future use, while existence value reflects the willingness-to-pay to know these resources simply exist. One methodology used to place a dollar value on non-use values is contingent valuation, a technique that involves the use of surveys to help determine people’s willingness to pay for something.

Open spaces also generate other types of value, including market values (the sales value of open space that is available for sale); enhancement values (positive influence on property values); production values (value of commodities produced by open space); the value of open space as a natural system (benefits of a natural ecosystem realized directly and indirectly by society); and more intangible values (e.g., scientific, aesthetic, genetic diversity, historical, cultural, and religious values).

The enhancement value of open space on property values has been well researched and documented. Numerous studies have demonstrated that homes and properties located close to open space are more valuable relative to properties located further away, holding all else constant. This relationship varies based on the various characteristics (type, size, location, etc.) of open space resources, including the quality of views provided by the open space near a property. Open space can indirectly affect property tax revenues realized by local jurisdictions through the effect open spaces have on property value assessments.

To help the reader understand the potential value of some of the KRNCA’s natural and cultural resources, and example of a range of typical non-market values for recreation activities is summarized in Table 2-15 from a recently published U.S. Forest Service report titled *Benefit Transfer of Outdoor Recreation Use Values* (Rosenberger and Loomis 2001). The Forest Service study used a “benefits transfer” methodology, which is defined as the application of existing information and knowledge on benefit values to new contexts. Table 2-15 provides summary statistics related to consumer surplus for 21 recreation activities derived from various economic studies and as compiled in the Forest Service report.

By applying the range of values in Table 2-15, an estimate of the recreation-related consumer surplus (using fiscal year 2002 recreation data) can be derived for the KRNCA; this is estimated to be \$3,723,785 per year (2000 dollars). While this may seem high, it represents a weighted average value of only \$25.71 per Visitor Day for all types of recreation, including hunting and fishing. This represents the total amount recreationists would likely be willing to pay for the related recreation activities if a fee for

participation were required. Those who are accustomed to free access and use of the public land tend to forget that it represents a recreation opportunity and experience that many would be willing to pay for. Participants in KRNCA-related organized recreation events that obtain commercial Special Recreation Permits have paid a fee for that activity, so the fees obtained from these permits (\$7,655) are excluded from this estimate.

**Table 2-15: Summary Statistics on Average Consumer Surplus Values
(per activity day per person from recreation demand studies – 1967 to 1998)¹**

ACTIVITY	NUMBER OF STUDIES	NUMBER OF ESTIMATES	MEAN OF ESTIMATES	MEDIAN OF ESTIMATES	STD. ERROR OF MEAN	RANGE OF ESTIMATES
Camping	22	40	\$30.36	\$24.09	5.50	\$1.69-187.11
Picnicking	7	12	\$35.26	\$24.21	9.66	\$7.45-118.95
Swimming	9	12	\$21.08	\$18.19	4.46	\$1.83-49.08
Sightseeing	9	20	\$35.88	\$21.13	9.41	\$0.54-174.81
Off-road driving	3	4	\$17.43	\$15.85	6.27	\$4.37-33.64
Motorized boating	9	12	\$34.75	\$18.15	11.65	\$4.40-169.68
Non-motorized boating	13	19	\$61.57	\$36.42	13.76	\$15.04-263.68
Hiking	17	29	\$36.63	\$23.21	7.87	\$1.56-218.37
Biking	3	5	\$45.15	\$54.90	8.40	\$17.61-62.88
Big game hunting	35	177	\$43.17	\$37.30	2.21	\$4.74-209.08
Small game hunting	11	19	\$35.70	\$27.71	9.56	\$3.47-190.17
Fishing ²	39	122	\$35.89	\$20.19	3.42	\$1.73-210.94
Wildlife viewing	16	157	\$30.67	\$28.26	1.38	\$2.36-161.59
Horseback riding	1	1	\$15.10	\$15.10	0	\$15.10-15.10
Rock climbing	2	4	\$52.96	\$48.14	11.80	\$29.82-85.74
General recreation	12	31	\$24.26	\$10.03	7.48	\$1.18-214.59
Other recreation	11	16	\$40.58	\$33.78	9.64	\$4.76-172.34

¹ Constant dollars (fourth quarter, 1996)

² Fishing includes all types of fishing such as cold water, warm water, and salt-water fishing. The number of estimates for fishing is under-representative of the entire body of knowledge since fishing studies were not a primary focus of the literature review.

Source: Rosenberger and Loomis 2001.

2.4 CULTURAL AND HISTORIC RESOURCES

2.4.1 Introduction

The KRNCA is rich in the remains of prehistoric occupation and numerous historic activities. The topography, coastal setting, presence of numerous perennial and seasonal water sources, wide range of floral and faunal species and other natural resources made this region a prime location for human habitation and economic pursuits over thousands of years. Cultural resources in the KRNCA range from early Native American village sites and activity areas to the remains of historic structures associated with tanbark, shipping, ranching, and recreational industries. Many sites have been documented within the

KRNCA in varying states of preservation and are subject to a number of natural and human-induced impacts. Efforts to eliminate or at least minimize some of these impacts have been implemented in recent years. While some of these efforts have been highly successful, some have not and numerous resources remain subject to the cumulative effects of weather, erosion, and vandalism.

Archaeological investigations have occurred in the KRNCA over the course of the last 70 years, though not in any systematic manner until relatively recently. Archaeological surveys of the King Range have been conducted primarily by Sonoma State University, U.C. Davis, and the BLM since the 1970s. These documented a number of cultural resources on the beach, at the mouths of major tributaries, and on some interior ridges and drainages (Levulett 1979, 1981, 1985; Levulett and Hildebrandt 1987; McGeachy and Bell 1979; Praetzellis 1995; Roscoe 1983; Rumph 1982; Tuttle 1982). As a result of these research efforts, over 100 prehistoric and historic sites have been documented. Of these, 17 (all located along the coastal strand) have been subjected to subsurface testing or excavation. The accumulated data were used to develop the King Range Cultural Resource Management Plan in 1988, which included site-specific recommendations for protection, stabilization, data recovery, and monitoring.



The Punta Gorda Lighthouse is on the National Register of Historic Places.

Active management of cultural resources began in 1974 when the King Range Management Program was approved by the Secretary of the Interior, the United States Congress, and the Governor of California and was endorsed by Humboldt and Mendocino Counties. At that time, the BLM contracted with Dr. David Fredrickson and Sonoma State University to conduct a comprehensive archaeological survey of the King Range coastal strand. Prior to 1974, very few sites had been recorded. In the early 1950s, Robert Greengo surveyed the coastal strand from Cape Mendocino in the north to about a mile south of the mouth of the Mattole River. Greengo recorded four sites in that locale and conducted test excavations at one of the sites (Greengo 1950: Letter report and site records on file: BLM Arcata Field Office). In 1954, Bennyhoff, Elsasser, and Davis recorded sites and did test excavations at Shelter Cove for a local landowner who had contacted U.C. Berkeley because of burials eroding out of the beach terrace (Macchi and Kroeber 1954: Correspondence plus letter report and site records from Elsasser, Davis, and Bennyhoff on file: BLM Arcata Field Office). This site, CA-Hum-182, became the focal point for future excavations by field schools in the 1980s due

to ongoing erosion and development projects. Valerie Levulett conducted surveys of the higher terraces and upper reaches of the King Range including ridges and inland areas, as well as revisiting all the coastal sites recorded by Fredrickson et al. (Levulett 1979, 1981, 1985).

Historic resources within the KRNCA have more recently begun receiving attention. Rodney Mayer of the Ukiah BLM nominated the Punta Gorda lighthouse to the National Register of Historic Places (NRHP) in 1975; it was subsequently listed in 1976. In the early 1990s, the BLM implemented a cooperative project with Sonoma State University under the direction of Dr. Adrian Praetzellis, historic archaeologist, to record and evaluate all historic structures and ruins in the KRNCA. Architectural drawings and comprehensive records were produced for all structures, along with pertinent archival research. In addition, local ranchers were interviewed and oral histories were recorded as part of this project.

2.4.2 Applicable Regulatory Framework

As a property owned and managed by the BLM, the KRNCA is subject to the provisions of Section 106 of the National Historic Preservation Act (NHPA) of 1966. Section 106 work is streamlined and modified under The California Protocol of 1998 between the BLM and the State Historic Preservation Officer (SHPO). This Programmatic Agreement (PA) has been reviewed annually and is used in conjunction with the BLM Manual Sections 8100-8160 after replacing the PA from 1991. Section 106 requires federal agencies to take into consideration the potential effects of proposed undertakings on cultural resources listed on or determined potentially eligible for inclusion on the NRHP, and to allow the Advisory Council on Historic Preservation the opportunity to comment on the proposed undertaking. The regulations implementing Section 106 are promulgated by the Secretary of the Interior, as codified in Title 36 Code of Federal Regulations (CFR) Part 800. Formal consultation is normally conducted between the SHPO and the BLM State Director or Deputy Preservation Officer.

Identification, evaluation, and management of cultural resources are ongoing processes. The evaluation of resources against the criteria for inclusion on the NRHP, including an assessment of site integrity or condition, the consideration of potential project-related impacts, and the development of management plans and actions relative to those impacts are additional elements of the Section 106 process.

Determining the NRHP eligibility of a site or district is guided by the specific legal context of the site's significance as set out in 36 CFR Part 60.4, and by the BLM Manual 8100 Series. The NHPA authorizes the Secretary of the Interior to maintain and expand a National Register of districts, sites, buildings, structures and objects of significance in American history, architecture, archaeology, engineering, and culture. A property may be listed on the NRHP if it meets criteria for evaluation as defined in 36 CFR 60.4:

“The quality of significance in American history, architecture, archaeology, engineering and culture is present in districts, sites, buildings, structures and objects that possess integrity of location, design, setting, materials, workmanship, feeling and association and:

- That are associated with events that have made a significant contribution to the broad patterns of our history; or
- That are associated with the lives of persons significant in our past; or
- That embody the distinctive characteristics of a type, period or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or

- That have yielded, or may be likely to yield, information important in prehistory or history.”

Most prehistoric archaeological sites are evaluated with regard to Criterion D of the NRHP, which refers to site data potential. Such sites typically lack historical documentation that might otherwise adequately describe their important characteristics. Archaeological methods and techniques are applied to gain an understanding of the types of information that may be recovered from these deposits. Data sought are those recognized to be applicable to scientific research questions or to other cultural values. For example, shellfish remains from an archaeological deposit can provide information about the nature of prehistoric peoples’ diets, foraging range, exploited environments, environmental conditions and seasons during which various shellfish species were taken. These are data of importance to scientific research that can lead to the reconstruction of prehistoric life-ways. Conversely, some archaeological sites are of traditional or spiritual significance to contemporary Native Americans or other groups, particularly those sites which are known to contain human burials.

Site integrity is also a consideration for the NRHP eligibility of an archaeological locale. The aspects of resources for which integrity is generally assessed include location, setting, design, workmanship, feeling, and association. These may be compromised to some extent by cultural and post-depositional factors (e.g., construction, maintenance, erosion, bioturbation, grazing, recreational use, etc.), yet the resource may still retain its integrity if the important information residing in the site survives. Conversely, archaeological materials such as shell or faunal remains may not be present in sufficient quantity or may not have adequate preservation for accurate identification. Thus, their potential as data to address important research questions is significantly reduced. Assessment of these qualities is particularly important for archaeological properties where the spatial relationships of artifacts and features are necessary to determine the patterns of past human behavior.

2.4.3 Existing Conditions

2.4.3.1 Documented Prehistoric Sites

At least 90 prehistoric sites have been identified within the KRNCA, the majority of which having been documented on or within a short distance from the coast. The favorable topography, numerous perennial stream courses, and diversity of floral and faunal resources, made these coastal areas highly attractive for prehistoric occupation. Consequently, numerous sites have been found in these areas. However, it is important to note that the concentration of sites along the coast may not necessarily reflect the entire range of prehistoric patterns of land use within the King Range and surrounding region. While beaches and near-beach areas were clearly important locations for early Native American populations, the density of recorded sites along the coast may also reflect the relative ease with which such sites can be discovered and recorded by researchers.

The 1988 King Range Cultural Resource Management Plan included a comprehensive list of sites (prehistoric and historic) located within the KRNCA. It also included a rating system intended to prioritize coastal sites in terms of their data potential, integrity and the level of risk to site integrity. The classification system identifies the following five priority levels:

1. Sites which are subject to severe or ongoing impacts, which have not been tested in the past, and which appear to contain numerous or unique data (or whose data potential is unknown); all require annual monitoring.
2. Sites subject to impact, but at a slower rate than those described above, which have not been tested, and which appear to contain numerous or unique data (or whose data potential is unknown); all require monitoring every 3 years.
3. Sites which have been tested and shown to contain diagnostic, unique, or otherwise valuable data, or where the sampling was incomplete; all require monitoring every 3 years.
4. Sites which have been tested and found to contain data redundant with those of other sites in the research area, but where enough deposit remains to allow additional data collection (e.g., for testing of specific research questions or methods); all require monitoring every 5 years.
5. Sites located on private land; such lands should be acquired as part of the King Range Acquisition program; failing this, BLM should seek preservation easements for these sites; in the meantime, sites should be monitored regularly, with owners' permission.

The individual site priority level also bears on potential eligibility for the NRHP. Levels of Site Prioritization and Categorization are also set forth in the BLM Manual (8110.4) and the Use Categories are as follows:

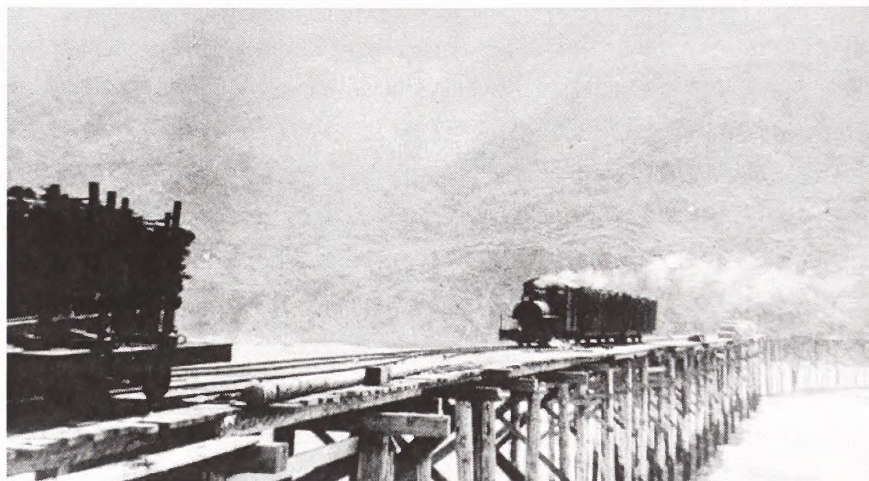
- Scientific Use
- Conservation for Future Use
- Traditional Use
- Public Use
- Experimental Use
- Discharged from Management

2.4.3.2 *Historic Sites*

In general, prehistoric cultural resources in the KRNCA have received a fair amount of attention from researchers over the past 50 years. Equally important, but less investigated, are the numerous historic remains within the KRNCA that are associated with various occupations and industries. Mining, ranching, tanbark, farming, logging, transportation, recreation, and shipping have all played important roles in the historical development of the King Range area.

Shelter Cove, in particular, was an important Humboldt County shipping port and statistics from 1881 reflect not only the prominence of this port but also the importance of sheep ranching in the King Range area. In that year it was reported that 220,000 pounds of wool were exported from Shelter Cove (probably from the Shelter Cove Wharf and Warehouse Company). Tanbark, cut from tanoaks found throughout the NCA and utilized in leather tanning was also shipped from Shelter Cove (2,000 cords in 1905). The tanbark industry died out in the early years of the 20th century as the cheaper and quicker chrome tanning method (first patented in 1884 by an American, Augustus Schultz) was fully adopted by the leather industry (see: www.all-about-leather.co.uk). Other major shipping points for tanbark were

also located in Bear Harbor and near Mattole Beach where a wharf extended into the ocean at Sea Lion Rock. Due to rough seasonal weather, this facility could not be employed during the winter months.



Few traces remain of the railroad tracks and wharf at the Mattole River mouth.

Few traces of the King Range's tanbark industry remain today except for some of the transportation routes, local place names and minor elements of the shipping facilities and wharves at Shelter Cove and near Mattole Beach. However, another of the major local industries, ranching, has left very tangible evidence on the landscape. The Chambers Ranch, situated near Mattole Beach, consists of a cabin and associated stock pens, barns, and other structures and is likely eligible for listing on the NRHP. Other ranching and farming-related structures and buildings occur in many areas within the King Range and many have been formally documented by the BLM.

Early recreational use of the King Range resulted in the construction of several hunting cabins and at least one complex of cabins and more substantial structures located on King Peak Road (which used to be called Horse Mountain Road), on Horse Mountain Ridge. Based on construction techniques and materials still visible in the building remains and associated artifacts, these facilities appear to have been constructed sometime before the 1920s or 1930s although they were still in use at least until the 1960s and 1970s.

Another group of structural remains, including a substantial cut stone foundation, are located along King Peak Road. Artifacts found in the area indicate an occupation as early as the late 19th century for this site with continued use of the property well into the 1950s or later. While General Land Office (GLO) plats do list the local homesteaders and their occupations, little information regarding this particular site has been found. However, it may have also served other purposes related to any of the industries and economic pursuits common to the King Range area during the latter half of the 19th and early 20th centuries.

2.4.4 Management Issues and Considerations

There are four predominant forces affecting prehistoric and historic cultural resources situated within the KRNCA: natural erosion, recreational use, livestock trampling/wallowing, and rodent burrowing. The natural forces of weathering and erosion are impacting many of the coastal Native American sites in

particular, as well as a number of historic sites such as the Punta Gorda lighthouse. Prehistoric occupation and burial sites are constantly being impacted by wave action and stream erosion, particularly during the winter months when heavy seas batter the coastline. The historic Chambers Ranch, including the cabin and associated ranch buildings, is also subject to climatic stresses although it remains in generally good condition.

Illegal activities have also caused damage to area cultural resources. Notable impacts include vehicles driving through sites (including those clearly marked), vandalism of the Chambers Ranch, destruction of an early recreational cabin on Horse Mountain Ridge, and the intentional destruction of fences protecting prehistoric sites near Mattole Beach. However, in general, vandalism appears to be the lesser of the management issues within the KRNCA and the impacts of natural erosion and weathering are more pressing concerns.

Sheep and cattle have been pastured on the coast area since the mid-19th century. Approximately 290 head of cattle are pastured in the KRNCA in any given year. These cattle tend to create extensive wallows, which can impact documented and unrecorded prehistoric sites in particular. Fences were constructed around some sites by the BLM to keep the cattle out of sensitive areas. However, cattle also congregate in and adjacent to the creeks in the KRNCA, which is where the many village sites were located. Wallowing and trampling can break surface artifacts, disturb the sandy soil, and shift the horizontal and vertical distribution of archaeological materials, severely impacting the integrity of cultural resources.

The BLM has implemented a number of measures in recent years to mitigate the effects of visitation, erosion, grazing, and bioturbation. Closure of the beach to OHV use has resulted in greater protection for prehistoric sites located in the sand dunes immediately adjacent to the beaches. The placement of interpretive signs and fencing has raised public awareness of the importance of such sites.

While fencing and site excavation may be the most expedient methods by which to preserve cultural resources and retrieve important scientific data, certain restrictions on these methods exist. Since the King Range CRMP was written, using fencing as a means to protect sites or restrict visitor access to certain areas has been discouraged by the BLM as it can degrade the visual and wilderness aspects of the KRNCA. Options such as plantings of various types of vegetation may have to be examined.

Concerning data collection on threatened sites, with the introduction of fairly recent regulations (NAGPRA, AIRFA, EO13007, etc.), any disturbance of sites in the KRNCA which may contain burials is avoided as preferred by the federally recognized Tribal entity; the Bear River Band of Rohnerville Rancheria. In the past, the Bear River Band has participated in all test excavations conducted to date. The BLM has a Tribal Resolution and a Plan of Action is in place with the Tribal government. Consequently, data collection may only be conducted on sites in imminent danger of outright destruction.

2.4.4.1 Traditional Native American Uses

Apart from the prehistoric and historic archaeological resources located within the KRNCA, a natural resource, bear grass, is an important plant species to many of the Native American groups currently inhabiting the region. Bear grass is a choice material for basket weaving, a traditional art form among Indian groups who have long-standing ethnographic ties to the region. It has been suggested that access

to certain areas of the KRNCA containing dense patches of bear grass be restricted only to qualified Native American groups. Such privileged restrictions, however, are not permitted by law for any group, including traditional Native American basket weavers.

Alternative means by which to preserve bear grass for Native American weavers will be considered in the plan. In addition, various bear grass habitat enhancement procedures may be effective, including controlled burns and the clearing of brush that opens an understory in which bear grass thrives. By expanding bear grass habitat in the KRNCA, the opportunities for gathering by the Native American community and other groups for traditional or economic pursuits would increase, reducing harvesting pressures on the limited existing distribution of the plant.

2.5 LANDS AND REALTY

2.5.1 Legislative History and the Land Acquisition Program

In 1929, the unreserved public domain lands in the King Range area were withdrawn from settlement or disposition by Executive Order 5237, pending classification. This was done at the request of the California State Division of Beaches and Parks due to the area's recreation potential (Congressional Record 1961, at 10182). However, no action was taken to classify the lands; they were closed to settlement or transfer, but not actively managed by the BLM for several decades. However, in the 1950s the area came to the attention of Congressman Clem Miller, who first introduced a bill to establish the KRNCA in 1961. His vision for the area was tied to comments made to Congress by President John F. Kennedy that same year, directing that public lands should be devoted to productive uses and maintained for future generations. Miller believed that outdoor recreation, at the time rising rapidly in popularity, could be balanced on equal footing with traditional extractive uses of public lands, and that efficient management of the King Range would require consolidation of the area's "crazy quilt" land ownership pattern (Congressional Record 1961, at 10181).¹⁸ His bill enjoyed a surprising consensus of support, including such diverse interests as the Humboldt County Board of Supervisors, the Humboldt County Cattlemen's Association and Farm Bureau, the Sierra Club, and a local group called the Mattole Action Committee (Hastey 1995).¹⁹

Miller died unexpectedly in a plane crash in 1962, but his successor Congressman Don Clausen continued to support the bill through the 1960s, and it was passed and signed into law in 1970 (Public Law 91-476). It authorized land acquisition by either purchase or exchange, and has been described as a "mini-organic act for the BLM," including a number of innovative management ideas and authorities for the agency (Hastey 1995). The Act is also considered an important precursor to FLPMA, which passed in the 1976 and serves as the basic guiding legislation for the BLM today.

At the time the KRNCA Act was signed in 1970, the BLM owned and managed roughly 30,000 acres within the boundaries delineated in the Act. The designated area also included approximately 24,000

¹⁸ Miller had also been active in passing the Multiple Use-Sustained Yield Act of 1960, defining "multiple use" as a balance of uses within an entire system, rather than the presence of every use on every tract of land. The KRNCA was originally conceived of as a "pilot BLM multiple use area" (Peterson 1996, at 11).

¹⁹ Undated "KRNCA Legislative History" states that Miller introduced his first bill "after extensive consultation with residents of neighboring communities."

acres of privately owned land. These private holdings were scattered throughout the KRNCA (see Figure 2-7), many of which were held by timber companies, plus the densely-platted (although with only 40 homes built at the time) subdivision of Shelter Cove and a scattered community of rural residences in Whale Gulch. The 1974 Management Program characterized the area as having active subdivision interest, yet actual residential construction had been very limited and the growth trend slow (BLM 1974).

The 1970 Act gave the BLM authority to acquire private lands via purchase or exchange, but only from willing sellers as long as the land use was compatible with the purposes of the Act (PL 91-476, Section 5(2)). Land exchange was the favored method, as a way of both consolidating BLM ownership in the King Range and relieving it of management responsibility for widely-scattered parcels, which were difficult and more expensive to manage, located in other parts of Humboldt County. In this way, both the BLM and private owners were seen to win, as management of both private and public lands could be more efficient and comprehensive. The Act also included limited condemnation authority, while stressing that acquisition by this method would only occur if all other methods had proved unsuccessful for parcels where the uses of the property were clearly incompatible with the overall purposes and objectives of the KRNCA. The Act specifically did not intend to eliminate private holdings or private enterprise from the conservation area, as they were “expected and encouraged to continue and to contribute to the overall economy and attractiveness of the area” (U.S. Congress 1970, at 3). Instead, the Act aimed to acquire most of the private land within the area through working with willing sellers: “The Department will attempt to acquire most of the private lands within the area except those in the Shelter Cove Development” (U.S. Congress 1970, at 10).

2.5.2 Existing Conditions

2.5.2.1 Land Acquisition

To date, BLM has acquired roughly 25,700 acres within the planning area. The vast majority of this acquisition, roughly 23,000 acres or 90 percent of the total, took place between 1973-1984 (see Appendix B for detail). The bulk of this acreage has been acquired by exchange, representing 46 parcels and over 22,200 acres, while 69 parcels have been purchased totaling only 3,076 acres.²⁰ In addition, four parcels adding up to not quite an acre were donated, and two parcels were condemned (due to development incompatible with the Act) for a total of 440 acres. In recent years acquisitions have been from willing sellers and all have been relatively small parcels. Since 1984, there have been 64 individual parcels acquired (out of a total of 120), but totaling only a little over 2,200 acres.

5,735 acres are still in private ownership within the KRNCA boundary, 2,966 acres of which are located outside of the Shelter Cove subdivision (see Figure 2-8). The BLM continues to acquire private lands within the area, with priority placed on coastal acquisitions from willing sellers. There were three life estate/reservations of right, all dating from the mid-1980s, for the access and use of private dwellings on acquired land, but only one currently remains active. The King Range Act does not allow for disposal of public lands within the KRNCA boundary.

²⁰ Approximately 12,800 acres of BLM lands outside the KRNCA area went to private owners in these exchanges, many of which were timber lands. (Total is 186,618 thousand board feet of timber exchanged out, while the BLM gained 6,386 tbf.)

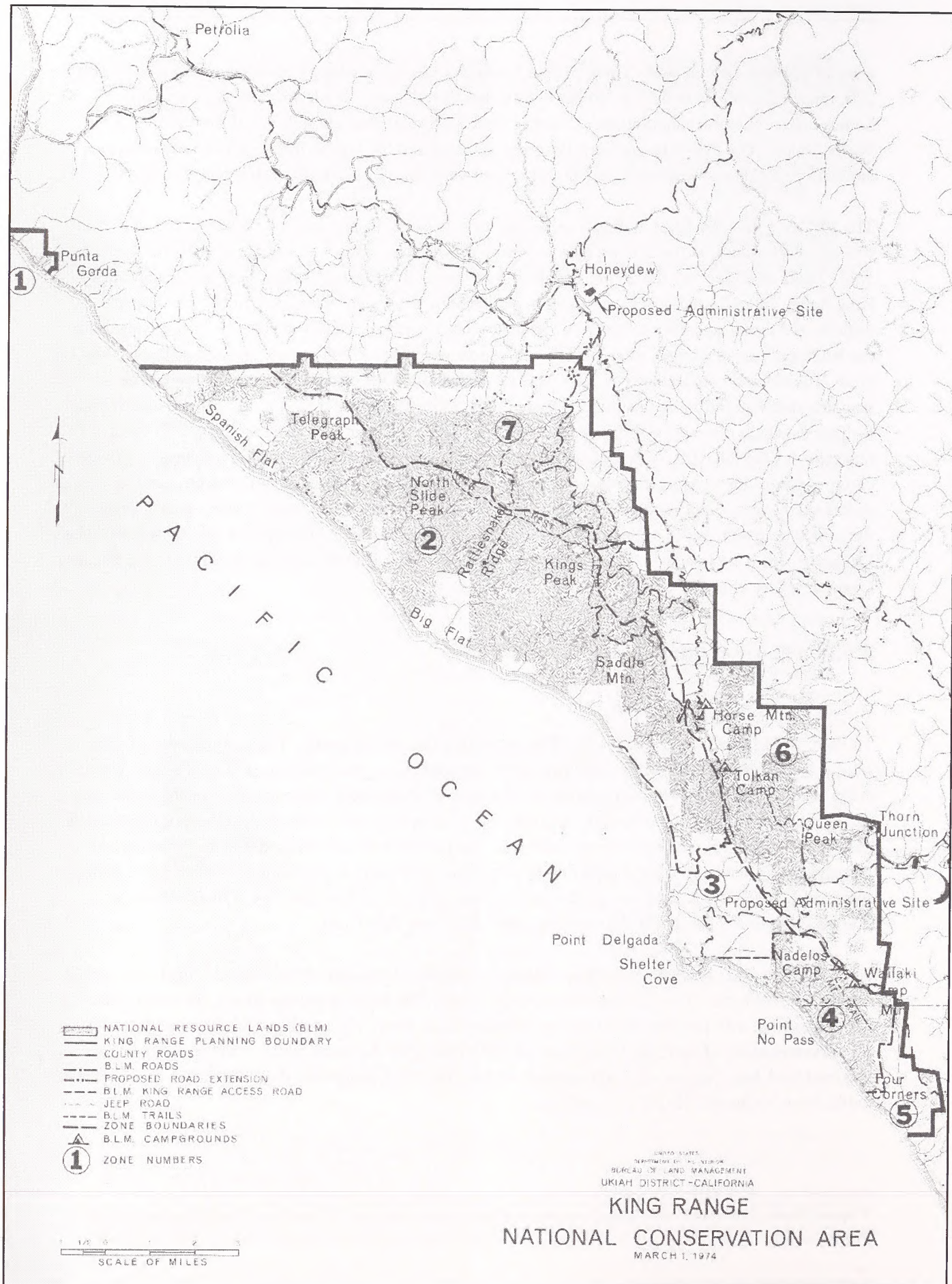


Figure 2-7
Land Ownership and Management Zones as of 1974

King Range National Conservation Area



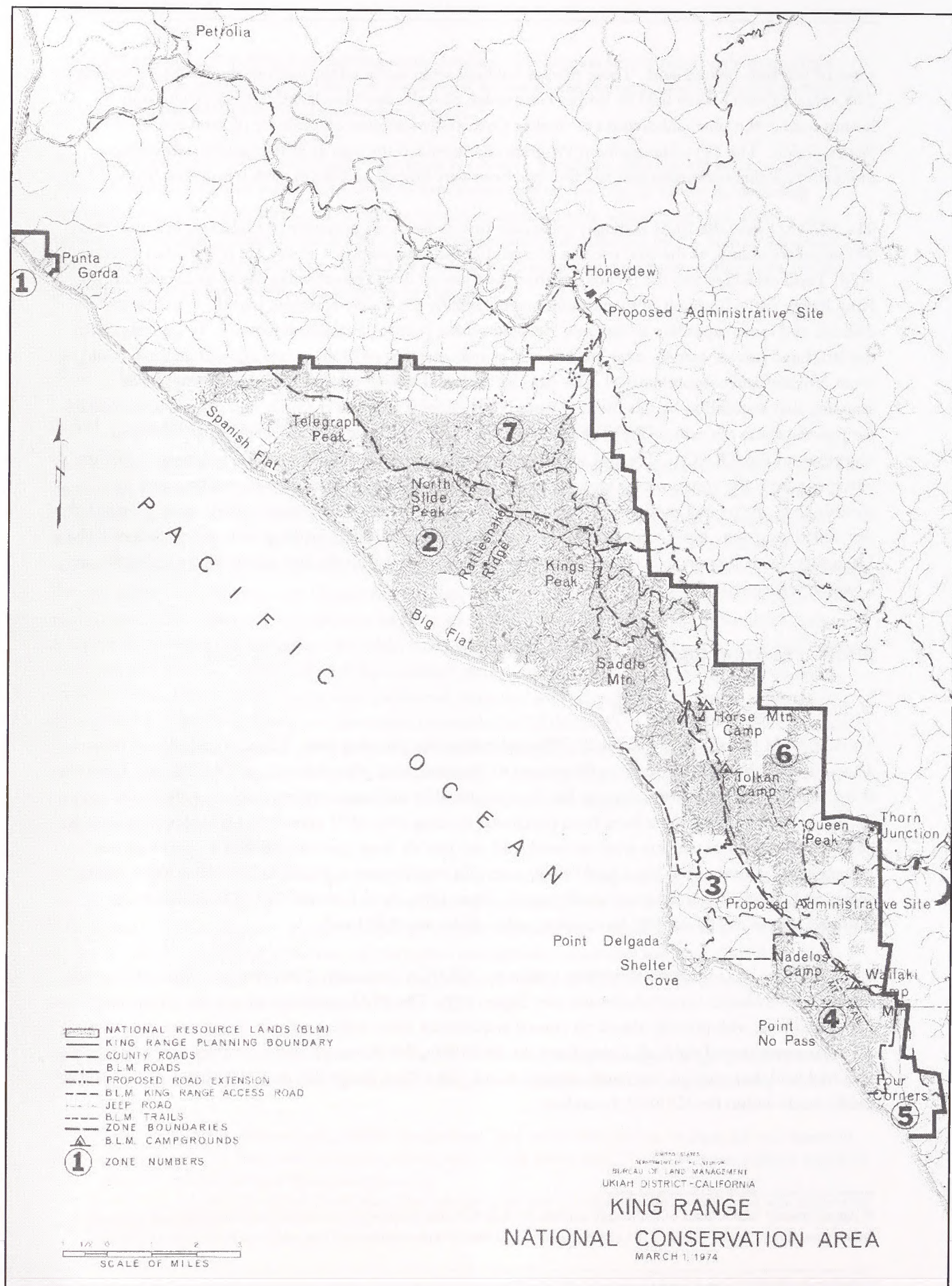


Figure 2-7
Land Ownership and Management Zones as of 1974

King Range National Conservation Area



Several community groups have championed land acquisition efforts in the region surrounding the KRNCA to conserve old-growth forests and watershed values. Three acquisition areas (Mill Creek, Indian Creek, and Squaw Creek) directly adjoin the KRNCA. These lands are now under BLM management and are included in this RMP. Two additional community-driven conservation efforts within the vicinity of the KRNCA are the Redwoods to Sea Corridor and Sanctuary Forest projects. The vision of the Redwoods to Sea project is to develop a wildlife/ecological corridor linking the King Range to Humboldt Redwoods State Park using a combination of land acquisitions and conservation easements. This project includes approximately 5,000 acres of land now under BLM stewardship. The Sanctuary Forest project focuses on the headwaters of the Mattole River, in an area of old-growth redwood forest and critical salmon spawning habitat cooperatively managed as the Upper Mattole River and Forest Cooperative. BLM lands make up a much smaller component of this project.

2.5.2.2 Rights of Way

The KRNCA has fifteen road rights-of-way, required to provide ingress/egress to private lands over federal lands. All of these follow existing roadways. Individual right-of-way agreements and requirements regarding access to private lands are beyond the scope of this plan and will not be discussed. Several BLM roads also provide access to private lands outside of the KRNCA boundary. These include the Noonung Creek Road, Finley Ridge Road, Paradise Ridge Road, and Prosper Ridge Road. In addition, the KRNCA includes the following utility and other rights-of-way:

- Power transmission lines: 2
- Telephone/Telegraph: 1 (Shelter Cove Road)
- Water Facilities: 1 (near Kaluna Cliff, for transport water over public land onto private land; State of California determines water permit)
- Other: 1 (Research facility on Lighthouse Road, housing the Mattole Salmon Group's fish hatchery)
- Communication Site: 1 (Verizon, one tower on Paradise Ridge)

2.5.2.3 Rights-of-Way Involving Water Diversions

Occasionally, neighboring property owners seek a right-of-way from the BLM to appropriate either groundwater or surface water from public lands. To date, requests for this purpose have been limited in the KRNCA, but are expected to increase as the population of the area grows. Surface water is defined as all perennial and seasonal seeps, springs, creeks, streams, and rivers. Although the impact of any one individual surface water diversion is typically small or immeasurable, cumulative diversions in a watershed can consume a significant portion of the in-stream flow. Due to geologic constraints and cost, groundwater use occurs infrequently in the area. Appropriation of groundwater can also result in reduced base flows in surface water bodies, although to a lesser extent than a direct diversion of surface water. As such, appropriation of groundwater is often ecologically preferable to diversion of surface water, and requires a case-by-case evaluation to properly determine the potential environmental consequences, if any.

2.5.2.4 BLM Water Rights

In California, water rights are administered by the State Water Resources Control Board (SWRCB). To protect water rights in the King Range, the BLM is required to establish and maintain these rights under the same set of priorities afforded private landowners. There are two types of water rights, riparian and appropriative. In order to assure that new upstream water diversions do not result in adverse consequences to public resources in the King Range, the BLM would be required to assert its water rights to protect minimum in-stream flows required for fisheries and riparian habitat, as allowed by California law.

Currently, none of the surface water bodies within the King Range has been identified as fully appropriated, implying that there is sufficient flow to support new diversions of water for agricultural, domestic, or industrial use. However, if upstream water demand grows in the future, it might not be possible for the BLM to ensure the minimum in-stream flows required for protection of public lands and resources unless water rights are established and maintained. Water rights priorities are established “first in time, first in right.”

The BLM either has, or is in the process of obtaining water rights in at least 10 locations in the KRNCA, primarily to benefit wildlife values and grazing leases. The BLM has no instream flow rights and there was no Federal Reserved Water Right obtained with the establishment of the area as an NCA.

2.6 INVENTORY UNITS AND STUDY AREAS

2.6.1 Lands Possessing Wilderness Characteristics

2.6.1.1 Applicable Regulatory Framework

Section 603 of the 1976 Federal Land Policy and Management Act (FLPMA) directed the Secretary of the Interior and the Bureau of Land Management (BLM) to review roadless areas of 5,000 acres or more having wilderness characteristics and to recommend to the President the suitability of such areas for preservation as wilderness. In determining these wilderness values, the law directs the BLM to use the criteria given by Congress in the Wilderness Act of 1964. In Section 2(c) of that Act, Congress states that wilderness is essentially an area of undeveloped federal land in a natural condition, without permanent improvements or human habitation, which has outstanding opportunities for solitude or a primitive and unconfined type of recreation. The area may contain ecological, geological, or other features of scientific, educational, scenic, or historical value.

The original inventory phase of this process, initiated in 1978, involved examining the public lands to determine and locate the existence of areas containing wilderness characteristics that met the criteria established in the Wilderness Act. This inventory process, with a general description of all of California's Wilderness Study Areas (WSAs), was published in *Wilderness: Final Intensive Inventory, Public Lands Administered by BLM California Outside the California Desert Conservation Area* (BLM 1979a). Subsequently in 1988, BLM issued the *Final Environmental Impact Statement for the Arcata Resource Area King Range WSA and Chemise Mountain WSA*, incorporating the wilderness recommendations into the planning process through an amendment to the Arcata Management Framework Plan.

Two Wilderness Study Areas, (the King Range and Chemise Mountain WSAs) totaling approximately 38,000 acres, were evaluated in the 1988 EIS. The BLM recommended to Congress that 24,960 acres be designated wilderness. Congress has the sole authority to designate an area as wilderness. Wilderness continues to be a major issue and various legislative proposals are being developed and debated, no definitive wilderness determination has yet been made for the King Range or Chemise Mountain WSAs. Until Congress decides whether to designate the areas as wilderness, the entire WSA acreage will be managed in accordance with the Bureau's *Interim Management Policy and Guidelines for Lands Under Wilderness Review* (1995). This policy lays out protective measures to prevent impairment of an area's suitability for preservation as wilderness. Consequently, both the King Range and Chemise Mountain WSAs are presently being managed under these guidelines, and will continue to be until either designated by Congress as Wilderness or released from protective management under Interim Management guidelines (see Figure 2-9).

2.6.1.2 *Wilderness Characteristic Assessment*

Since the original wilderness inventory was conducted in 1978-79, there have been numerous land acquisitions both adjacent to and within the WSAs. In addition, some intrusions, such as old logging roads, have rehabilitated naturally and in some locations have been physically decommissioned, recontoured, and replanted, and are successfully reverting back to a more natural condition. In 2003, as part of the development of this RMP and EIS, these specific type areas within or adjacent to the King Range and Chemise Mountain WSAs were examined to determine if they have wilderness characteristics.



The Squaw Creek headwaters area is an example of lands that have returned to a more natural character.

Twelve parcels of public land containing 10,327 acres adjacent to the King Range WSA were evaluated, and three parcels containing 215 acres adjacent to the Chemise Mountain WSA. Out of that total, 10,259 acres were found to meet the minimum criteria for wilderness characteristics (see Figure 2-10). This acreage was carried forward into the plan alternatives for analysis (see Section 3.8). Also, the entire 200

acres of purchased inholdings were found to possess wilderness characteristics. This assessment is on file with the BLM King Range office and is available for public review.

Because all parcels evaluated are adjacent to an existing WSA, the size requirement for lands possessing wilderness characteristics was met. In addition, those units found to possess wilderness characteristics all appear to have been affected primarily by the forces of nature, and exhibit outstanding opportunities for solitude and/or unconfined recreation. Most parcels also contain one or more outstanding supplemental values.

2.6.2 Wild and Scenic Rivers

2.6.2.1 Applicable Regulatory Framework

The Wild and Scenic Rivers Act of 1968 (Public Law 90-542) was passed by Congress to preserve riverine systems that contain outstanding features. The law was enacted during an era when many rivers were being dammed or diverted, and is intended to balance this development by ensuring that certain rivers and streams remain in their free-flowing condition. The BLM is mandated to evaluate stream segments on public lands as potential additions to the National Wild and Scenic Rivers System (NWSRS) during the Resource Management Plan (RMP) Process under Section 5(d) of the Act. The NWSRS study guidelines are found in BLM Manual 8351, U.S. Departments of Agriculture and Interior Guidelines published in Federal Register Vol. 7, No.173, September 7, 1982 and in various BLM memoranda and policy statements. Formal designation as a Wild and Scenic River requires Congressional Legislation, or designation can be approved by the Secretary of Interior if nominated by the Governor of the state containing the river segment. There are no existing Wild and Scenic Rivers designations within the King Range.

2.6.2.2 Wild and Scenic Rivers in the Vicinity of the King Range

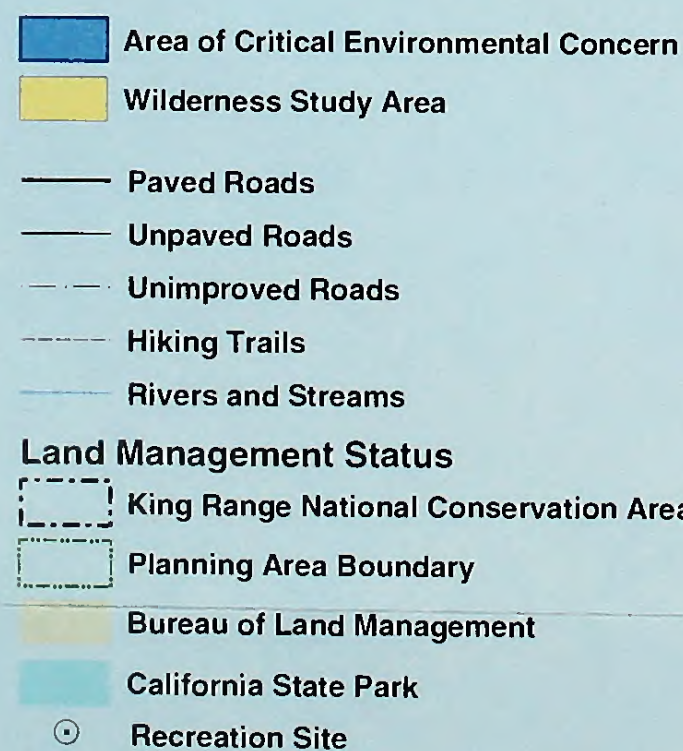
The closest rivers to the King Range with existing Wild and Scenic designation are the Trinity, Van Duzen, and Eel Rivers. The South Fork Trinity and Van Duzen Rivers are approximately 20-40 miles inland and north of the planning area. The South Fork of the Eel River flows northward just inland from the planning area.

Several streams that adjoin the planning area were studied in the 1995 Arcata Resource Management Plan Amendment. These included short segments of the Mattole River and Bridge Creek (both near the King Range Administrative Site), and Jewett Creek. All three of these segments were found to be eligible for inclusion in the Wild and Scenic system. No suitability determination was made at that time. Segments of Squaw Creek and Shoals Creek were found ineligible.

As part of this planning effort, all rivers and streams in the planning area were evaluated for their eligibility and suitability for designation under the Wild and Scenic Rivers Act. A total of 34 stream segments were evaluated. The results of this evaluation are contained in Appendix C.

[illegible]

Figure 2-9 Existing Special Designations



December 5, 2003 Source: US Department of the Interior, Bureau of Land Management 2002; EDAW, Inc. 2002

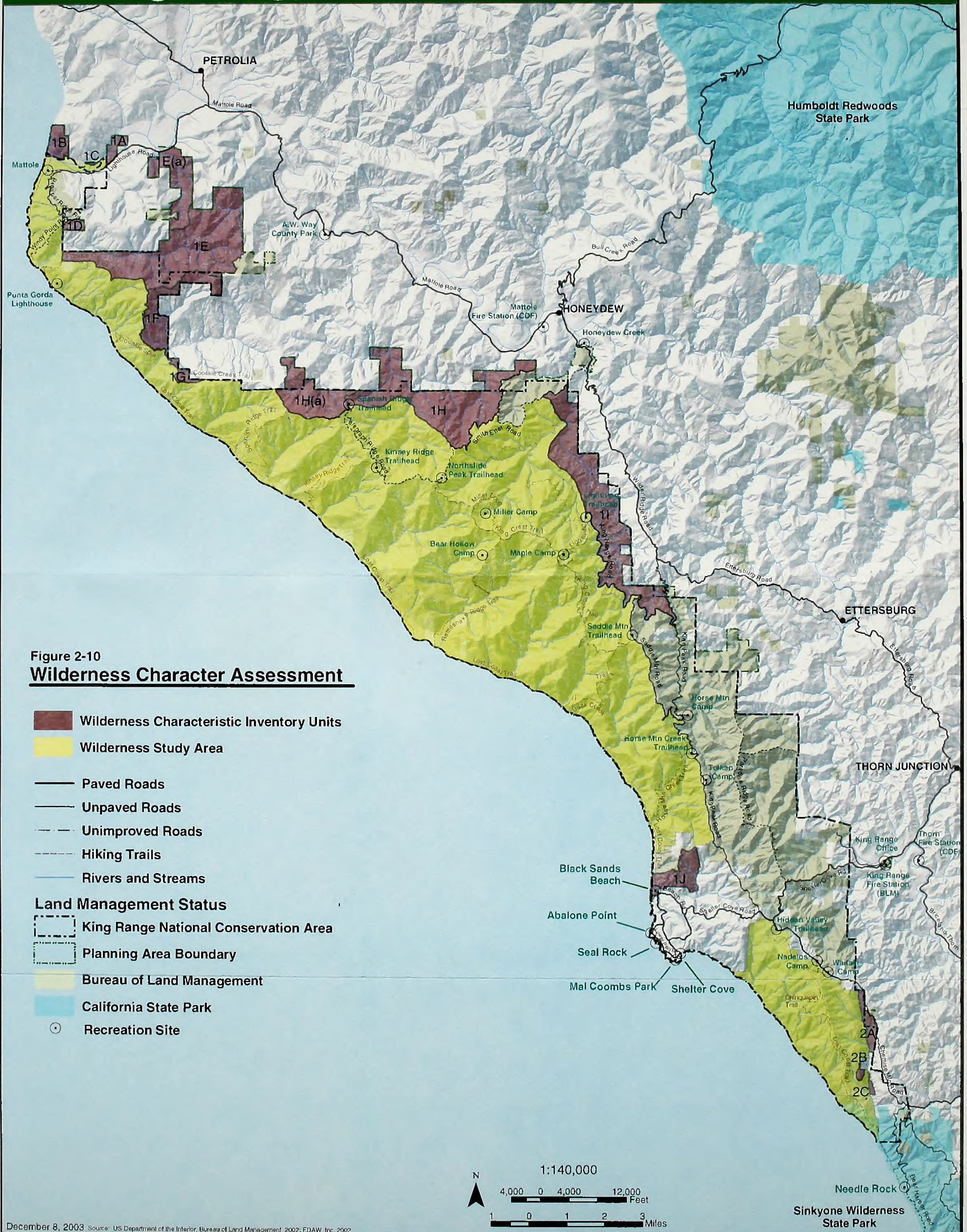
1:140,000

4,000 0 4,000 12,000 Feet

1 0 1 2 3 Miles

Sinkyone Wilderness
State Park

King Range National Conservation Area





Big Flat Creek was one of 28 streams found eligible for Wild and Scenic River designations.

2.6.3 Areas of Critical Environmental Concern

2.6.3.1 Applicable Regulatory Framework

Areas of Critical Environmental Concern (ACECs) are areas of public land where special management attention is required to protect important natural and/or cultural resource values. The ACEC designation indicates to the public that the BLM recognizes these significant values, and has established special management measures to protect them. The BLM is required to consider designation of ACECs under Section 202(c)3 of the Federal Land Policy and Management Act (CFR 1610.7-2). Areas may be nominated for consideration as ACECs by the BLM, other agencies, or members of the public.

In order for an area to be designated as an ACEC, both of the following criteria must be met:

- **Relevance:** The area must have a significant cultural, historic, scenic, wildlife, fish, or other natural system or process.
- **Importance:** The above value, resource, process or system must be distinctive and be of greater than local significance.

Areas with significant natural hazards may also be designated as ACECs, although no areas meeting these criteria are known to exist within the KRNCA.

The KRNCA currently has one designated ACEC: The Mattole ACEC, which was designated in the King Range Extension Plan (1981) to protect significant archaeological sites, the fragile sand dune ecosystem, and riparian areas/ wildlife values in the Mattole Estuary. The original ACEC encompassed 350 acres. (Federal Register Vol. 54 no. 249, 12/29/89). The ACEC was expanded in a 1996 Plan Amendment to include 305 acres of newly acquired lands on the north side of the Mattole Estuary. The ACEC extends from the public land boundary north of the Mattole Estuary south for 7.5 miles to Sea Lion Gulch (see Figure 2-9).

2.7 WATER QUALITY

2.7.1 Applicable Regulatory Framework

Numerous factors can affect water quality within the KRNCA, including road construction and maintenance, land management practices, water consumption, pollution spills, and waste disposal practices. Water quality impacts from each of these activities are regulated under both federal and state laws.

The primary federal laws that are pertinent to water quality in the King Range include:

- The Clean Water Act and amendments (CWA)
- The Safe Drinking Water Act and amendments (SDWA)
- The Resource Conservation and Recovery Act (RCRA)

The U.S. Environmental Protection Agency has granted primacy to the State of California to implement portions of both the Clean Water Act and the Safe Drinking Water Act. The California state laws and regulations that are pertinent to water quality in the King Range include:

- The Porter-Cologne Water Quality Control Act
- The California Water Code
- The California Fish and Game Code
- The California Health and Safety Code

The BLM is required to comply with the above laws and regulations. The regulatory agencies that are primarily responsible for oversight of BLM's activities as related to water quality are the State Water Resources Control Board (SWRCB), the California Regional Water Quality Control Board—North Coast Region (RWQCB), the California Department of Health Services—Office of Drinking Water (CDHS), and the U.S. Environmental Protection Agency.

2.7.2 Existing Conditions and Management Practices

2.7.2.1 *Surface Water*

In general, watersheds within the King Range have experienced relatively little development compared to surrounding watersheds. For this reason, creeks, streams, and rivers in the King Range offer quality habitat for numerous aquatic species. Section 303(d) of the Clean Water Act requires each state to identify streams, rivers and lakes that do not meet water quality standards even after the implementation of technology based controls. The Mattole River is the only major water body in or adjacent to the King Range that has been listed as impaired on the State of California's Clean Water Act 303(d) list. The SWRCB and RWQCB identified excessive sedimentation and elevated temperature as causes for the impairment. As such, the BLM is required to minimize any action in the Mattole watershed that would threaten to further exacerbate temperature or sediment problems in the Mattole River or its tributaries.

As a major landowner in the Mattole River watershed, some of the BLM's activities will likely be regulated under the prescribed Total Maximum Daily Load for the watershed.

One of the primary factors affecting increased water temperature is reduced flow, especially during the warmer summer months when base flows in the Mattole River's tributary streams and the river are relatively small. Decreased base flow results from upstream diversion of springs and streams. Removal of riparian vegetation can result in increased solar radiation falling on the channel. Discharge of sediment from failing or improperly designed roads, forest fires, and poor land management practices can result in excessive sedimentation of the channel, reduction of available spawning habitat, and reduced effective channel depth. Relatively small changes in these individual factors can combine to result in large reductions in available cold water fish habitat.

2.7.2.2 Groundwater

Due to the abundance of surface water, groundwater sources have not traditionally been relied upon in the King Range area. However, due to increasing sensitivity regarding drinking water quality and the potential environmental effects of excessive surface water diversions, the BLM has begun to increase its reliance on groundwater in the King Range. Specifically, the Mattole Campground potable water supply relies upon a groundwater well, and another well is planned for the King Range Administrative site. In those areas where groundwater wells are or will be installed to provide water to the public, the BLM is required to implement a wellhead protection plan to ensure that operations do not impair groundwater quality. The benefits of groundwater over surface water include increased in-stream flow for aquatic habitat, reduced treatment requirements for public water supplies, and reduced wear and maintenance of water supply system equipment. Compliance with drinking water law and regulations is described further under Facilities

2.7.2.3 Water Pollution

The BLM does not have and does not envision any operations in the King Range that would involve permitted point-source discharges under the Clean Water Act and the National Pollutant Discharge Elimination System (NPDES). The only potentially regulated non-point source discharge in the King Range results from operations at the King Range office in Whitethorn, CA. Although existing laws and regulations do not require this facility to operate under the State of California's general NPDES permit for stormwater discharges, the facility has a stormwater pollution prevention plan that specifies management practices intended to minimize water quality impacts resulting from operations at the facility. In the unlikely event that new construction will result in more than one acre of ground disturbance, the BLM will file a Notice of Intent to the RWQCB indicating that discharges resulting from the construction project will be managed in accordance with the requirements in the applicable general NPDES permit.

Waste generation and disposal practices can also result in water pollution. The BLM currently disposes of all waste in a proper manner, as required by state and federal laws. All wastewater generated in the King Range is considered domestic sewage and, except for the King Range Administrative Facility, is either discharged to the Shelter Cove wastewater collection system or is pumped from pit toilets and properly disposed by a licensed hauler. The King Range Administrative Facility discharges its waste to a septic system.

2.7.2.4 Watershed Restoration

In general, watershed restoration involves upgrading, reshaping and/or abandonment of outdated roads. Many of these older roads were constructed in a manner that now create significant potential for the road to wash out or fail and deliver large volumes of sediment into streams that support anadromous fisheries. Although restoration efforts are undertaken for the purpose of reducing sediment discharges to these streams, road maintenance, reshaping, and abandonment activities can also cause incidental sediment discharges. The BLM employs erosion control measures, frequently termed “best management practices” (BMPs), as needed during watershed restoration activities to reduce or eliminate incidental sediment discharge. Some of the BMPs include mulching, installation of sediment curtains, placement of hay bales, and other drainage control features, construction of rolling dips, and seasonal limits on operations.

2.8 AQUATIC ECOSYSTEMS AND FISHERIES

2.8.1 Introduction

The KRNCA provides habitat for salmon and steelhead listed as “threatened” under the federal Endangered Species Act (ESA). The fish were listed by Evolutionarily Significant Units (ESUs). The four ESUs are: Southern Oregon/Northern California Coasts (SONCC) coho salmon (*Oncorhynchus kisutch*), California Coastal (CC) Chinook salmon (*O. tshawytscha*), Central California (CC) coho salmon (*Oncorhynchus kisutch*), and Northern California (NC) steelhead (*O. mykiss*), hereinafter referred to as Pacific salmonids. Available information indicates that KRNCA salmonid habitat is recovering from the combined impacts of relatively recent flood events and past land uses, and riparian vegetation has re-established in the impacted area. However, in logged areas, climax communities along streams will not return to pre-harvest levels for centuries affecting recruitment of large wood to streams. Instream habitat quality and quantity has been reduced due to past land use practices, severely impacting salmonid populations. Restoration efforts, changes in land use patterns and riparian protection standards, and public ownership of lands has allowed instream habitat to begin recovering. Sedimentation from roads continues to be a primary impact to salmonid habitat, although impacts have been reduced through cooperative road maintenance efforts between public and private landowners, road restoration efforts, and broad scale transportation management and maintenance programs.

2.8.2 Applicable Regulatory Framework

The KRNCA provides habitat for the following federally listed Pacific salmonids:

- Southern Oregon/Northern California Coasts (SONCC) coho salmon (*Oncorhynchus kisutch*); listed under the Endangered Species Act (ESA) as threatened (62 FR 24588; May 6, 1997). Designated critical habitat (64 FR 24049; May 5, 1999) encompasses accessible reaches of all rivers between the Mattole River in California and the Elk River in Oregon, inclusive.
- Central California (CC) coho salmon (*O. kisutch*); listed under the ESA as threatened (61 FR 56138; October 31, 1996). Designated critical habitat includes accessible reaches from Punta Gorda, within the KRNCA, south to the San Lorenzo River in central California. However, this species has not been documented within streams draining the KRNCA.

- California Coastal (CC) Chinook salmon (*O. tshawytscha*); listed under the ESA as threatened (64 FR 50394; September 16, 1999). Designated critical habitat (65 FR 7764; February 16, 2000) was withdrawn in 2002.
- Northern California (NC) steelhead (*O. mykiss*); listed under the ESA as threatened (65 FR 36094; June 7, 2000), no critical habitat designated.

Section 7 of the federal Endangered Species Act requires BLM to enter into consultation with NOAA Fisheries for any discretionary federal action which may affect the above federally listed Pacific salmonids or designated critical habitat. Furthermore, Section 7 directs the BLM to carry out conservation programs to aid in the protection and recovery of these species.

In addition to critical habitat designations for listed Pacific salmonids, Essential Fish Habitat (EFH) provisions of the Magnuson-Stevens Act (MSA, as amended 1996) require heightened consideration of habitat for commercial species in resource management decisions, including EFH for SONCC coho salmon and CC Chinook salmon. EFH is defined in Section 3 of the MSA as “those waters and substrates necessary to fish for spawning, breeding, feeding, or growth to maturity.” The National Oceanic and Atmospheric Administration National Marine Fisheries Service (NOAA Fisheries) interprets EFH to include aquatic areas and their associated physical, chemical, and biological properties used by fish that are necessary to support a sustainable fishery and the contribution of the managed species to a healthy ecosystem. Freshwater EFH for Pacific salmonids includes all those streams, lakes, ponds, wetlands, and other water bodies currently, or historically, accessible to salmon in Washington, Oregon, Idaho, and California, except areas upstream of certain impassable man-made barriers, and long-standing impassable natural barriers. The MSA and its implementing regulations at 50 CFR 600.92(j) require that before a federal agency may authorize, fund or carry out any action that may adversely effect EFH, it must consult with NOAA Fisheries. The KRNCA contains EFH for coho and Chinook salmon.

Finally, the Mattole watershed is one of eight Key Watersheds identified in the Northwest Forest Plan Record of Decision (1994) within the Coastal Province.

2.8.3 Existing Conditions

Habitat for Pacific salmonids within the KRNCA can be divided into two main regions: the east side of the KRNCA contains approximately twelve percent of the Mattole River watershed, and the western portion contains seventeen coastal streams that drain directly into the Pacific Ocean. The mainstem of the Mattole is approximately 62 miles in length, and has over 74 tributaries. The KRNCA contains approximately 56 miles of the 193 miles of anadromous habitat within the Mattole River watershed, and includes streams that contribute significantly to salmonid production in the Mattole River basin (see Figure 2-11).

Runs of Pacific salmonids in the Mattole River basin have declined drastically in recent decades. Anecdotal evidence as recent as the 1970s indicates that salmonids were so numerous that they could be speared, snagged, or netted at numerous locations along the lower river. CDFG (1965) estimated spawning escapement numbers at 5,000 Chinook salmon, 2,000 coho salmon, and 12,000 steelhead. Redd surveys and carcass counts conducted by watershed restoration groups since 1981 indicate that a few hundred pairs of spawners utilize the Mattole River and that steelhead is the primary species in the

Mattole River basin. It is estimated that steelhead numbers in the Mattole have declined less drastically than coho and/or Chinook salmon. Peak numbers of steelhead were observed in the estuary/lagoon in September 1994: 3,000 young-of-the-year, and 7,000 yearlings. Results of these surveys as well as previous studies of the Mattole estuary by Busby et al. (1988), indicate that rearing habitat in the Mattole estuary/lagoon is of poor quality due to lack of deep water habitat, high water temperatures, and poor food resources. Spawning surveys have been conducted in Bear, Honeydew, and Mill Creeks by watershed groups and have documented adult steelhead spawning. Bear Creek was stocked with steelhead and rainbow trout in the 1930s and in 1972, and the Mattole Watershed Salmon Group has implemented hatchbox programs for Chinook and coho salmon in Bear Creek since 1982.



The salmon fishery is an important part of the identity and culture of the region.

Source: Anne Machi Collection.

2.8.3.1 Species Accounts

Coho Salmon (*Oncorhynchus kisutch*)

General life history information and biological requirements of SONCC coho salmon have been described in various documents (Shapovalov 1954; Hassler 1987; Sandercock 1991; Weitkamp et al. 1995) as well as NOAA Fisheries' final rule listing SONCC coho salmon (May 6, 1997; 62 FR 24588). Adult coho salmon typically enter rivers between September and February. Spawning occurs from November to January (Hassler 1987), but occasionally as late as February or March (Weitkamp et al. 1995). Coho salmon eggs incubate for 35-50 days between November and March. Successful incubation depends on several factors including dissolved oxygen levels, temperature, substrate size, amount of fine sediment, and water velocity. Fry start emerging from the gravel two to three weeks after hatching and move into shallow areas with vegetative or other cover. As fry grow larger, they disperse up or downstream. In summer, coho salmon fry prefer pools or other slower velocity areas such as alcoves, with woody debris or overhanging vegetation. Juvenile coho salmon over-winter in slow water habitat with cover as well. Juveniles may rear in fresh water for up to 15 months then migrate to the ocean as "smolts" from March to June (Weitkamp et al. 1995).

King Range National Conservation Area



Figure 2-11 Extent of Anadromy

Anadromous Fish Type

-  Steelhead
-  Coho and Steelhead
-  Chinook, Coho, and Steelhead
-  Chinook and Steelhead

Land Management Status

-  King Range National Conservation Area
-  Planning Area Boundary
-  Bureau of Land Management
-  California State Park
-  Recreation Site
-  Paved Roads
-  Unpaved Roads
-  Unimproved Roads
-  Hiking Trails
-  Rivers and Streams

In preparation for their entry into a saline environment, juvenile salmon undergo physiological transformations known as smoltification to adapt them for their transition to salt water. Coho salmon adults typically spend two years in the ocean before returning to their natal streams to spawn as three-year olds.

Available historical data and most recent published coho salmon abundance for California are summarized by NOAA Fisheries status review update (NOAA Fisheries Southwest Fisheries Science Center 2001). The number of streams with coho salmon present within the SONCC ESU was found to have declined from 1989-2000. In the CC ESU the number of streams identified as having historical coho salmon presence generally ranged between 44 to 48 percent from 1989-2000. The decline of SONCC coho salmon is not the result of one single factor, but rather a number of natural and anthropogenic factors that include dam construction, instream flow alterations, and land use activities coupled with large flood events, fish harvest, and hatchery effects.

All coho salmon stocks between Punta Gorda and Cape Blanco are depressed relative to past abundance, but there are limited data to assess population numbers and trends. The Mattole Salmon Group implemented coho salmon enhancement projects in Mill Creek from 1981 to 1987, and this tributary has provided the only known spawning and rearing habitat for coho salmon in the lower 27 miles of the Mattole. There were an estimated 500 spawners in 1981-1982, a peak of greater than 1,000 spawners in 1987-1988, and less than 200 spawners in 1994-1995. In 1987, a hatchbox program for coho salmon was implemented by watershed groups in an attempt to avoid the extinction of native Bear Creek coho salmon. Although the range of CC coho salmon overlaps the KRNCA from Punta Gorda south, coho salmon have not been documented in available habitat (coastal streams that drain directly into the Pacific Ocean) except for occasional observations of a few individuals. These streams may not be suitable (too steep, etc.) for utilization by CC coho salmon.

Chinook Salmon (*O. tshawytscha*)

NOAA Fisheries' (Meyers et al. 1998) status review of Chinook salmon contains information on the biological requirements of Chinook salmon. In summary, Chinook salmon mature between 2 and 6+ years of age (Myers et al. 1998). Fall-run Chinook salmon enter freshwater at an advanced stage of maturity, move rapidly to their spawning areas on the mainstem or lower tributaries of the rivers, and spawn within a few days or weeks of freshwater entry (Healey 1991). Post-emergent fry seek out shallow, near-shore areas with slow current and good cover, and begin feeding on small terrestrial and aquatic insects and aquatic crustaceans. The optimum temperature range for rearing Chinook salmon fry is 50°F to 55°F (Rich 1997, Seymour 1956) and for fingerlings is 55°F to 60°F (Rich 1997). In preparation for their entry into a saline environment, juvenile salmon undergo physiological transformations known as smoltification that adapt them for their transition to salt water. The optimal thermal range for Chinook during smoltification and seaward migration is 50°F to 55°F (Rich 1997). Chinook salmon addressed in this document exhibit an ocean-type life history, and smolts out-migrate predominantly as subyearlings, generally during April through July. Chinook salmon spend between 2 and 5 years in the ocean (Bell 1991; Healey 1991), before returning to freshwater to spawn. Some Chinook salmon return from the ocean to spawn one or more years before full-sized adults return, and are referred to as jacks (males) and jills (females).

A summary of Chinook salmon abundance (Myers et al. 1998) concluded that habitat loss and/or degradation is widespread throughout the range of listed Chinook salmon and that Chinook salmon in the Mattole River are at “high risk of extinction” (in Meyers et al. based on Higgins et al. 1992) and at “high extinction risk” (in Meyers et al. based on Nehlson et al. 1991). Restoration workers have implemented hatchbox programs since 1980 and have increased survival of early life stages through rearing salmon eggs to juvenile life stages and then releasing juvenile Chinook salmon back into the Mattole River system.

Steelhead (*O. mykiss*)

Winter-run steelhead enter fresh water between November and April in the Pacific Northwest (Busby et al. 1996; Nickelson et al. 1992), migrate to spawning areas, and then spawn, generally in April and May (Barnhart 1986). Some adults, however, do not enter some coastal streams until spring, just before spawning (Meehan 1991). Summer steelhead enter freshwater in the spring and summer months, hold in the mainstem river and large tributaries, and then spawn in fall. Both winter-run and summer-run are found in the Mattole River, although summer-run steelhead are considered rare. Only winter-run steelhead are known to exist in the west side streams. Steelhead require a minimum depth of 0.18 m and a maximum velocity of 2.44 m/s for active upstream migration (Smith 1973). Spawning and initial rearing of juvenile steelhead generally take place in small, moderate-gradient (generally 3-5 percent) tributary streams (Nickelson et al. 1992). A minimum depth of 0.18 m, water velocity of 0.30-0.91 m/s (Smith 1973), and clean substrate 0.6-10.2 cm (Nickelson et al. 1992) are required for spawning. Steelhead spawn in 3.9-9.4°C water (Bell 1991). Depending on water temperature, steelhead eggs may incubate for 1.5 to 4 months (August 9, 1996, 61 FR 41542) before hatching, generally between February and June (Bell 1991). After two to three weeks, in late spring, and following yolk sac absorption, alevins emerge from the gravel and begin actively feeding. After emerging from the gravel, fry usually inhabit shallow water along banks of perennial streams. Fry occupy stream margins (Nickelson et al. 1992). Summer rearing takes place primarily in the faster parts of pools, although young-of-the-year are abundant in glides and riffles. Winter rearing occurs more uniformly at lower densities across a wide range of fast and slow habitat types. Productive steelhead habitat is characterized by complexity, primarily in the form of large and small wood. Some older juveniles move downstream to rear in larger tributaries and mainstem rivers (Nickelson et al. 1992). Steelhead prefer water temperatures ranging from 12-15°C (Reeves et al. 1987). Juveniles live in freshwater from one to four years (usually two years in the California ESU), then smolt and migrate to the ocean in March and April (Barnhart 1986). Winter steelhead populations generally smolt after two years in fresh water (Busby et al. 1996).

Population estimates of juvenile steelhead in the small coastal drainages within the western portion of the KRNCA were made for the 1999 and 2000 field seasons (Engle et al. 2002). At least two age classes were documented in all streams sampled during the two years of study, abundance varied between streams and the highest abundance/stream was 12,856 juvenile steelhead.

Other Fish Species

The tidewater goby (*Eucyclogobius newberryi*), listed as endangered under the ESA, is endemic to California and is distributed in brackish-water habitats along the California coast. However, three sections of coastline in California, characterized by precipitous topography, lack lagoons at stream mouths and therefore form gaps in the distribution of the tidewater goby including from Humboldt Bay to Ten Mile

River (FR Vol. 57, No. 239, Dec. 11, 1992) including the King Range coastline. No sightings of tidewater goby have been documented in the lower Mattole River or other streams draining the KRNCA.

The bocaccio (*Sebastes paucispinis*) rock fish, an ESA Candidate species, lives among rocky reefs and soft ocean bottoms from Kodiak Island, Alaska, to Punta Blanca, Baja California. Populations of bocaccio are separated into northern and southern population segments, and the distribution of the northern population segment includes ocean habitat adjacent to the KRNCA. NOAA Fisheries recently determined that listing bocaccio is not warranted, but will retain bocaccio on the ESA Candidate Species list and continue to monitor its status. The decline of this species is due to a combination of over-harvesting and poor recruitment of young into the population. Although the southern population has substantially declined, measures have been taken, including the elimination of all directed fishing for this species.

Other non-listed fishes have been collected (Busby et al. 1988) from the lower Mattole River including Pacific lamprey (*Lampetra tridentata*), coastrange sculpin (*Cottis aleuticus*), prickly sculpin (*Cottus asper*), threespine stickleback (*Gasterosteus aculeatus*), surf smelt (*Hypomesus pretiosus*), redbtail surfperch (*Amphistichus rhodotermis*), shiner surfperch (*Cymatogaster aggregata*), walleye surfperch (*Hyperprosopon argenteum*), staghorn sculpin (*Leptocottus armatus*), speckled sandab (*Citharichthys stigmaeus*) and starry flounder (*Platichthys stellatus*). Pacific lamprey was petitioned for listing under the federal Endangered Species Act in January, 2003, and a status review is currently in preparation.

2.8.3.2 Habitat Status

The Mattole River historically produced large runs of salmon and steelhead; however, habitat quality and quantity has been reduced. Large-scale changes to the Mattole River occurred in response to the 1955 and 1964 floods, which coincided with peak years of logging and road building in the basin. The Mattole watershed has the second highest erosion rate in northern California, second only to the Eel River watershed (Griggs and Hein 1980) and is underlain primarily by young sedimentary rocks which are highly erosive and often incompetent, easily fragmented and cracked. The dominant rock formation is the Franciscan Coastal Belt assemblage and disturbance events in the Mattole watershed profoundly affect hillslope processes and instream habitat. Earthquakes, storm events, and lightning fires are the major natural disturbances, and in combination with human induced disturbance have triggered accelerated erosion. The King Range lies within a very active tectonic setting and has undergone extensive deformation, resulting in extreme geologic and geomorphic instabilities. Topography is steep and rainfall intensities are some of the highest in California. The mainstem Mattole stores massive amounts of sediments contributed from higher gradient tributaries, a condition that is not uncommon in northern California rivers within large, low gradient alluvial valley reaches.

Logging practices in the Mattole River watershed were identified as the “specific critical habitat problem” in a status review by Myers et al. (1998). There were an estimated 3,310 miles of active and abandoned roads in the Mattole River watershed (Perala et al. 1993) and the combined effects of these roads may be the single largest source of fine sediment delivered to the Mattole River. Stored sediments from past logging and road building have severely impacted fish habitat quality and quantity in the mainstem Mattole River. Pools have aggraded, and restoration groups have placed scour structures in some areas in an attempt to restore pool quality. Estuary habitat, a crucial link in the lifecycle of Pacific salmonids, has been reduced by excessive sedimentation, which has also resulted in higher water temperatures and

adverse impacts to food resources. Elevated summer water temperatures are one of the primary limiting factors for salmonids rearing in the Mattole River and impair salmon production at the reach and stream scales. However, smaller tributaries have lower temperatures and provide summer rearing habitat as well as summer low flow inputs to the Mattole River that are critical to the survival of salmonids. Loss of stream shading due to past logging and agriculture, aggradation due to increased sedimentation, and ongoing water withdrawals all continue to reduce instream habitat quantity and quality. Abatement of road-related drainage and erosion hazards is a top priority in terms of reducing upslope sources of erosion and further minimizing impacts to Pacific salmonid habitat. In March of 1994, the Environmental Protection Agency added the Mattole to its list of impaired watersheds (303d list) and a Draft Total Maximum Daily Load (TMDL) document has been prepared (North Coast Regional Water Quality Control Board, 2002).. The Mattole is impaired with regard to temperature, turbidity, and sedimentation. The California Department of Fish and Game recognized problems in the Mattole and recommended a policy of “zero net discharge” of sediment be implemented for all future timber harvest operations.

Within the KRNCA boundary, the west side of the King Range contains 39 perennial streams which range from small, narrow channels containing neither fish nor amphibians to large, broad channels containing both anadromous and resident fishes as well as an assortment of amphibians and riparian-dependent reptiles. Thirteen streams contain anadromous fish populations: Fourmile Creek, Cooskie Creek, Randall Creek, Spanish Creek, Oat Creek, Kinsey Creek, Big Creek, Big Flat Creek, Shipman Creek, Buck Creek, Gitchell Creek, Horse Mountain Creek, and Telegraph Creek. Recent studies (Engle 2001, Baldwin in progress) have found each stream to have relatively small populations of winter-run steelhead. Coho salmon have been observed in Fourmile Creek and Telegraph Creek although these streams do not appear to regularly support populations of coho salmon. A few juvenile coho salmon were captured in Big Creek during the summer of 1999 but extensive efforts to observe and capture coho salmon in 2000 and 2001 found none present. Coastrange sculpin are found in all streams containing steelhead and have also been observed in Willow Creek. Prickly sculpin have been captured in Cooskie Creek. Threespine stickleback have been captured in Cooskie Creek and Big Flat Creek.

In general, the west side streams are short and steep. The Fourmile Creek, Cooskie Creek, and Randall Creek watersheds contain more coast prairies than forests. These watersheds have experienced extensive grazing since the late-1800s. Sheep were the primary livestock in this area until the 1970s when ranchers switched to cattle. The watersheds south of Randall Creek are predominately forested. Some logging has occurred in the some of the watersheds which had private ownership but logging in these watersheds was not conducted at nearly the levels experienced in the Mattole watershed.

The largest streams, Big Creek and Big Flat Creek, appear to transport a relatively high volume of bedload originating from a number of large landslides found in their headwaters and major tributaries. In general these streams tend to have cool summer water temperatures, the notable exception to this is Cooskie Creek which regularly exceeds 80° F during summer months. Fish habitat quality in these streams is generally good but quite variable depending on channel morphology and gradient. None of these streams forms an estuary, even during periods of high streamflow.

2.8.4 Management Issues/Practices

Currently, public lands in the Mattole watershed are managed consistent with the 1994 Northwest Forest Plan (NWFP). A primary component of the NWFP, the Aquatic Conservation Strategy (ACS), was designed to protect salmon and steelhead habitat by maintaining and restoring ecosystem health at watershed and landscape scales. Restoration has been championed by local watershed and salmon restoration groups in cooperation with the BLM since the 1970s and projects have been focused in the estuary, the lower river, and tributaries of the Mattole River. Livestock grazing continues in the lower Mattole watershed up to the lower North Fork and also on lands to the south of the Mattole within the KRNCA, including 11,100 acres within the following allotments: Spanish Flat, Strawberry Rock, Windy Point, and HJ Ridge. Timber harvest continues on private and industrial timberlands in forested uplands and throughout the upper watershed. BLM also maintains a campground and trailhead on the south side of the mouth of the Mattole and recreation (hiking and camping) is a primary use.

Although some of the above land uses continue to impact the watershed, on-going restoration efforts have made substantial progress improving habitat conditions. In general, approximately half of the watershed areas in the KRNCA are in relatively stable condition and half of the area has been impacted by past logging and road building. Within the Mattole Basin, parts of Bear and Honeydew Creeks are the least impacted by historic and ongoing land uses and these tributaries have the highest potential for providing refugia habitat for Pacific salmonids due to current conditions, land ownership patterns and potential for restoration.

Bear Creek lies within the KRNCA and is the third largest tributary of the Mattole River. Bear Creek provides approximately 19 miles of spawning and rearing habitat for Pacific salmonids and the watershed is comprised of predominantly public lands. Most of the land acquired by BLM was previously owned and logged by large timber companies. Many miles of abandoned roads were present on the acquired lands in the watershed and BLM has instituted an ongoing program of road rehabilitation to reduce the potential for road failures and chronic inputs of sediment. Currently there are arterial gravel roads that transect the Bear Creek watershed and segments have been identified as minor sediment sources. Proper maintenance, upgrades, and rehabilitation of erosion features have been identified and implemented to protect salmonid habitat from further sedimentation. Many homesteads and some agricultural operations obtain water from Bear Creek, which reduces habitat quantity and quality particularly during summer low flows. One grazing allotment currently exists in this watershed. Available information on physical habitat parameters indicates that instream habitat is recovering from floods, fire, and past land uses and riparian vegetation is well established. However, later seral coniferous riparian forests that provided large wood to streams will not likely return to pre-1950s levels for centuries.

Honeydew Creek is the fourth largest tributary of the Mattole River and approximately 69 percent of the watershed is in public ownership. The portion of this watershed within the KRNCA contains headwater tributaries that drain the north and east slopes of the King Range. The watershed contains seven sub-watersheds and of these watersheds, the upper mainstem and the West Fork have had minimal human impacts and could be characterized as refugia relative to aquatic habitat conditions. In contrast, the East Fork of Honeydew Creek, Bear Trap Creek, and High Prairie Creek have been intensively logged and grazed. Large scale erosion in this watershed along with removal of large streamside conifers contributed to simplification of the stream channel and reduced habitat quality and quantity for native fishes. The lower four miles of Honeydew Creek are in a broad alluvial valley where instream habitat has been

impacted by grazing, logging, residential development, water withdrawals, and sediment from logging and roads. Higher gradient channels at upper elevations transport sediment loads downstream and instream habitat exhibits less sedimentation effects than lower gradient channels. Although summer water temperatures are below lethal levels for salmonids, temperatures have been at stressful levels for long periods during the summer. However, Honeydew Creek is still three to five degrees below the temperatures in the Mattole River and comprises a significant portion of summer low flow inputs to the Mattole River.

The upper watershed, including the upper mainstem Honeydew Creek, West Fork and Upper East Fork, has not been as subjected (relative to other areas in the watershed) to impacts of high road density, timber harvest or vegetation type conversion. Portions of the Upper East Fork of Honeydew Creek downslope of the King Range Road experienced intensive tractor-based logging in the 1960s, while the watershed area upslope of the road has not been logged. Spawning habitat for coho and Chinook salmon is limited to areas of gentle gradient (2 percent or less), and significant low gradient sections are found in the lower mainstem and East Fork. Steelhead are able to access and spawn in steeper reaches. These steeper reaches have also been subject to chronic sediment inputs. Occasional sediment pulses, however have tended to maintain habitat quality and transport sediment downstream. Thus, Honeydew Creek provides more habitat for steelhead than coho or Chinook salmon. BLM (1996) reported that fish habitat in the steeper tributaries of Honeydew Creek is in good condition with the exception of Bear Trap Creek. The road network on public lands has been assessed by BLM and King Range Road had been identified as a concern because of the potential for culvert failures and sediment inputs to streams. In 1996, the northern-most 3.5 miles of the King Range Road, within the Upper East Fork of Honeydew Creek, was removed, which has reduced chronic sedimentation and potential catastrophic failures from plugged culverts and channel diversions. Continued road maintenance on all roads has been identified as a critical component of aquatic habitat protection and recovery.

Mill Creek is a tributary of primary importance to the lower Mattole River as it is the most significant source of cold water (Mattole Restoration Council 1995), has excellent water quality, and supports a population of SONCC coho salmon, as well as steelhead. Mill Creek is unique among Mattole River tributaries as instream habitat shows little evidence of sedimentation from past floods and logging. The lower mile of Mill Creek has been the most utilized by salmonids. The Lighthouse Road culvert, within the lower reaches of Mill Creek, had been a barrier to migration until modified in 1977 and 1980. In 2002, this culvert was replaced with a bridge to allow fish passage at all life stages. This stream has high potential as refugia for recovery of populations in the Mattole basin.

In addition, seventeen coastal streams drain the western portion of the KRNCA, flowing directly into the Pacific Ocean; most of them are too small to support fish populations. Seven of these streams were studied by Humboldt State University students in 1999-2000 including Cooskie, Randall, Spanish, Oat, Kinsey, Big, and Big Flat Creeks. Researchers (Engle et al. 2002) concluded that all of the coastal streams in the KRNCA are unique with respect to morphology, instream habitat and species composition. In addition, studies indicated that steelhead and resident trout utilize these small, steep coastal streams and they may be uniquely adapted to extreme habitat conditions including high stream energy, low summer base flows, high sediment supply and transport, and a lack of estuary habitat. Disturbances in these small watersheds have included cattle grazing, logging (limited areas), recreation/hiker use, slides, fires, and floods. Other studies of west side King Range streams are currently in progress.

2.9 WILDLIFE

2.9.1 Existing Conditions/Species

Twenty-one special status wildlife species, including six threatened or endangered species and fifteen otherwise determined to be sensitive, are found within the King Range, and are listed in Table 2-16. Critical habitat for four of the six threatened or endangered species also occurs within the KRNCA. The table also includes several species not known to occur in the King Range but that must be addressed by the plan due to their federal status, proximity to neighboring populations, historic occurrence, and/or presence of suitable habitat. Species names in the table in **bold type** indicate known presence in the project area.

Table 2-16: Federally and State Listed/Proposed Endangered or Threatened, and BLM Sensitive Wildlife Species

SPECIES	STATUS	PREFERRED HABITAT	OCCURRENCE AND COMMENTS
AMPHIBIANS			
<i>Rhyacotriton variegatus</i> Southern Torrent Salamander	Federal: Species of Concern State: Species of Special Concern	Southern torrent salamanders can be found in and near cold mountain streams, springs, and seepages that are well shaded (Stebbins 1966). They require water for all stages of their life cycle and are seldom more than one meter from free-running water (Nussbaum and Tait 1977).	Surveys conducted in 1997 (Welsh and Hodgson) throughout the KRNCA commonly detected southern torrent salamanders in late seral forest streams. Within second growth forested habitats this species was detected only in the headwaters of the Mattole and Bridge Creek (Welsh and Hodgson 1997).
<i>Rana boylei</i> Foothill Yellow-legged Frog	Federal: Species of Concern State: Species of Special Concern BLM: Sensitive	Breeding occurs in the spring, where adults congregate in habitats consisting of shallow, slow flowing water with pebble and cobble substrate, preferably with shaded riffles and pools (Fuller and Lind 1992). This species is also known to utilize moderately-vegetated backwaters, isolated pools, and slow moving rivers with mud substrates (Corkran and Thoms 1996).	The foothill yellow legged frog occurs in streams throughout KRNCA in late seral forests, second growth forests and mixed second growth forest/grassland habitats (Welsh and Hodgson 1997).
<i>Rana aurora aurora</i> Northern Red-legged Frog	Federal: Species of Concern State: Species of Special Concern	Breeding habitat consists of permanent or temporary water surrounded by dense grassy or shrubby vegetation (Jennings and Hayes 1994). Adult frogs prefer habitat with patches of dense grassy or shrubby vegetation (Jennings and Hayes 1994). Northern red-legged frogs tolerate higher salinity levels than most frog species and commonly occur in coastal habitats (D. Ashton, pers. comm., 2003).	Though uncommon, northern red-legged frogs may occur in marshy areas, ponds, stream, and estuary edges throughout the KRNCA (G. Hodgson, pers. comm. 2003).

Table 2-16: Federally and State Listed/Proposed Endangered or Threatened, and BLM Sensitive Wildlife Species

SPECIES	STATUS	PREFERRED HABITAT	OCCURRENCE AND COMMENTS
BIRDS			
<i>Pelecanus occidentalis californicus</i> Brown Pelican	Federal: Endangered State: Endangered	Feeding occurs primarily in shallow estuarine waters with the birds seldom venturing more than 20 miles out to sea (FWS 1995). Sand spits and offshore sand bars are used extensively as daily loafing and nocturnal roost areas (FWS 1995, Fix and Bezener 2000).	Brown pelicans use the near-shore Pacific Ocean west of the project area and may occasionally use the beach and coastal promontories for day-roost sites. The birds occur in the area in the summer and fall of the year with a few rare occurrences being noted in the winter and spring (Harris 1991). Offshore rocks and sea stacks are used as roosting and loafing sites.
<i>Nycticorax nycticorax</i> Black-crowned Night Heron	Federal: None State: None BLM: Sensitive	Nests are placed individually or, most commonly, in colonies numbering up to several hundred pairs in trees, shrubs, or marsh vegetation; they are occasionally concealed in dense undergrowth. Black-crowned night-herons are sometimes abroad during the day, but specialize in hunting at night. At that time they occupy many foraging venues in wetlands, along shores, or otherwise in proximity to water.	These herons are resident over much of lowland California in appropriate habitat, both coastally and inland. Black-crowned night herons are year round residents within the KRNCA.
<i>Elanus leucurus</i> White-tailed kite	Federal: None State: None FWS: MNBMC	White-tailed kites are a locally common resident and breeder in northern California, especially in agricultural and riparian areas of the coastal plain (Harris 1996). White-tailed kites nest and roost in trees or small bushes in semi-open areas; mostly on the coastal plain (Harris 1996). Ungrazed habitats are strongly preferred over grazed habitats (D. Fix, pers. obs.).	Kites roost communally during the non-breeding season, roosting as many as 120 birds per site in the Eel River delta. Most of the northwestern California population occurs in bottomlands near the coast and in the near-coastal lowlands. White-tailed kites regularly occur in the KRNCA (BLM 2002).
<i>Haliaeetus leucocephalus</i> Bald Eagle	Federal: Threatened State: Endangered	Adult and immature eagles from Alaska and the Pacific Northwest migrate along the coast following the salmon runs (Buehler 2000). They are typically situated within two miles of water bodies that support adequate food supply (Lehman 1979, USDI 1986). Bald eagle nests are usually located in uneven-aged, multi-storied stands with old-growth components (Anthony et al., 1982).	Bald eagle nesting activity has not been detected on the project area, but has been documented on the Mad River (PALCO 1998). A few bald eagles regularly winter in the vicinity of the project area on Yager Creek, the Eel, Elk, and Van Duzen Rivers, but none have been documented on the subject property. Bald eagles have been observed at the mouth of the Mattole River during spring 2002 and about one mile south of Saddle Mountain trail head in late October 2001.
<i>Falco peregrinus</i> Peregrine Falcon	Federal: Delisted	Although not strictly tied to aquatic habitats, peregrine falcons rely	Peregrine falcons are present in Northern California throughout

Table 2-16: Federally and State Listed/Proposed Endangered or Threatened, and BLM Sensitive Wildlife Species

SPECIES	STATUS	PREFERRED HABITAT	OCCURRENCE AND COMMENTS
	State: Endangered FWS: MNBMC	upon populations of flocking birds such as shorebirds and ducks during the colder months, therefore favoring shorelines and shallows (Harris 1996, Fix and Bezener 2000). Preferred nesting sites include inaccessible cliffs on rocky outcrops and in river gorges (Fix and Bezener 2000).	the year. The CDFG peregrine falcon database documents eyries near the KRNCA at Shelter Cove and Cape Mendocino (CDFG 2002). Nesting habitat and prey are available within the KRNCA. Lack of documented occurrence information is mainly due to a lack of survey effort.
<i>Charadrius alexandrinus nivosus</i> Western Snowy Plover	Federal: Threatened State: Species of Special Concern FWS: MNBMC	In northern California, snowy plovers breed and winter along ocean beaches and gravel bars of the Eel River (Colwell et al. 2002). Nesting occurs above the high tide line in sandy substrate, and occasionally on driftwood (LeValley 1999).	Breeding season snowy plover surveys have taken place monthly at the mouth of the Mattole River and along gravel bars in the lower reaches of the river for the past 4 years. No snowy plovers have been detected, although there are historical records during the winter season.
<i>Brachyramphus marmoratus</i> Marbled Murrelet	Federal: Threatened State: Endangered	Murrelets are coastal birds that nest in mature mixed conifer habitat up to 50 miles inland from the coast (FWS 1997). Marbled murrelets feed on small fish and invertebrates in near-shore marine waters, and nest inland primarily in older, large-limbed trees (Paton et al. 1987). Suitable nesting habitat has been described as mature to overmature coniferous stands, or those younger stands with interspersed large trees which may provide nesting opportunities (FWS 1997).	Between 1994 and 1999 approximately 3,231 acres of the best potential suitable marbled murrelet habitat in the KRNCA was surveyed to current protocol. One visual fly-over detection in the Squaw Creek watershed (just north of North Slide Peak) was documented in 1995.
<i>Gymnogyps californianus</i> California Condor	Federal: Endangered	Condors nest on cliffs and in burned out snags. Feed on carrion.	There are two historical records of condor in northwestern California (Harris 1996).
<i>Coccyzus americanus occidentalis</i> Yellow-billed Cuckoo	Federal: Candidate State: Endangered BLM: None	Patch size is an essential landscape feature for yellow-billed cuckoos (Laymon and Halterman 1985). While nests are almost always placed in willows, cottonwoods are extremely important for foraging (Laymon and Halterman 1985). The best habitats for nesting are at large sites with high canopy cover and foliage volume, and moderately large and tall trees.	Although there are no records of yellow-billed cuckoos within the KRNCA, they may be expanding their range and suitable habitat can be found in riparian areas. There have been sightings of cuckoos along the lower Eel River (Fernbridge to Cock Robin Island) in each of the last 3 years (G. Falxa, pers. comm. 2003).
<i>Strix occidentalis caurina</i> Northern Spotted Owl	Federal: Threatened State: Species of Special Concern FWS: MNBMC	The northern spotted owl is strongly associated with late-successional/old-growth forests. In northern California the spotted owl also occurs in some types of relatively young forests, especially where those forests are structurally	There are 12-14 known spotted owl activity centers in the King Range. BLM has surveyed much of the suitable habitat in conjunction with project related reviews, however there remains unsurveyed habitat.

Table 2-16: Federally and State Listed/Proposed Endangered or Threatened, and BLM Sensitive Wildlife Species

SPECIES	STATUS	PREFERRED HABITAT	OCCURRENCE AND COMMENTS
		similar to late-successional / old-growth forest stands (Solis and Gutierrez 1990).	
<i>Chaetura vauxi</i> Vaux's Swift	Federal: Species of Concern State: Species of Special Concern FWS: MNBMC	Vaux's swifts breed in coastal coniferous forests, with a significant minority now using chimneys in towns and cities. They forage in forest openings, burned-over forest, meadows, rivers, lakes, and suburbia. Nearly all roosts in migration are detected in chimneys (Fix and Bezner 2000).	Vaux's swifts occur in forested habitats of the KRNCA (BLM 2002).
<i>Empidonax traillii brewsteri</i> Little Willow Flycatcher	Federal: Species of Concern State: Endangered (includes all subspecies)	Willow flycatchers have been found in riparian habitats of various types and sizes, ranging from small willow-surrounded lakes or ponds with a fringe of meadow, to grasslands, willow lined streams or sapling-dotted boggy areas. They have also been found several times in young regenerating Douglas fir stands in northern Humboldt County, with breeding confirmed in 1998 (D. Fix, pers. comm. 2003).	Willow flycatchers irregularly occur in the KRNCA where they have been detected in riparian and scrubland habitats (BLM 2002).
<i>Contopus cooperi</i> Olive-sided Flycatcher	Federal: Species of Concern State: none FWS: MNBMC	Olive-sided flycatchers breed in extensive conifer forests and stands from near sea level to 9000 feet in elevation. During migration this species occurs in a wide variety of habitats requiring only full-crowned trees (Fix and Bezener 2000). Olive-sided flycatchers are commonly detected near forest openings, burns, ponds, and bogs.	In the KRNCA olive-sided flycatchers uncommonly occur during spring and summer in forest and scrubland habitats (BLM 2002).
<i>Empidonax difficilis</i> Pacific Slope Flycatcher	Federal: Species of Concern State: none FWS: MNBMC	Pacific-slope flycatchers inhabit moist woodlands, mixed forests, low- to middle-elevation coniferous forests, shady, steep-walled canyons and ravines in locations with full shade (Fix and Bezner 2000).	In northern California this species is a common to abundant migrant, summer resident and breeder (Harris 1996). Pacific-slope flycatchers occur in appropriate habitats in the KRNCA.
<i>Toxostoma redivivum</i> California Thrasher	Federal: Species of Concern State: none FWS: MNBMC	California thrashers inhabit chaparral, foothills, and dense shrubs (Udvardy 1998).	California thrashers are uncommon year round residents in the southern portion of the KRNCA (BLM 2002). It is the only location where California thrashers occur in Humboldt County.
<i>Dendroica occidentalis</i> Hermit Warbler	Federal: Species of Concern State: none	Within the King Range this species occurs in forestland and scrubland habitats (BLM 2002).	Hermit warblers are common in the KRNCA during the summer breeding season, uncommon during spring and fall and absent in winter (BLM 2002, Harris 1996).

Table 2-16: Federally and State Listed/Proposed Endangered or Threatened, and BLM Sensitive Wildlife Species

SPECIES	STATUS	PREFERRED HABITAT	OCCURRENCE AND COMMENTS
MAMMALS			
<i>Corynorhinus townsendii</i> Townsend's Big-eared Bat	Federal: None State: Species of Special Concern	Townsend's big-eared bats are year-round California residents. Individuals are loyal to their natal sites (Pierson et al. 1991, Pierson 1996). Roosts are found within caves, abandoned mines, and buildings. Rock crevices and large snags may also provide habitat for roosting (Howell et al. 1996). Night roosts may occur in more open settings, including under bridges (Philpott 1997).	One active roost site is located in south-eastern Mendocino County (Pierson and Rainy 1994). Three roosts are known in Humboldt County (M.J. Mazurek and D. Purdy, pers. comm. 2003). The largest roost, located on Pacific Lumber Company land in a shack on the Eel River, hosts approximately 400 bats and is unusual in that it is used in consecutive years. A smaller roost of about 40 adult bats occurs in Grizzly Creek Redwoods State Park. At this location, bats roost in basal tree hollows. Deficient information within the King Range is due to lack of survey effort.
<i>Martes pennanti pacificus</i> Pacific Fisher	Federal: None State: Species of Special Concern BLM: Sensitive	Pacific fishers prefer late successional forests, especially for resting and denning, and occur most frequently where these forests have the fewest non-forested openings (Arthur et al. 1989, Thomasma et al. 1991, Powell 1993, Powell and Zielinski, 1994). The presence of a dense, continuous shrub layer is an important habitat element for fishers in the Pacific northwest (K. Zielinski, pers. comm. 2003)	No fishers were detected during surveys conducted using Trailmaster infra-red trip cameras at fourteen baited stations in the BLM Arcata Management Area, including the King Range Management Area, in 1999 and 2000 (Hawks 2000).
<i>Eumetopias jubatus</i> Steller's Sea Lion	Federal: Threatened State: None NMFS: Protected by Marine Mammal Protection Act	Steller's sea lions inhabit rocky shores and nearshore coastal waters (Whitaker 1998). They usually feed at night in water less than 180m deep within 15-25 km of shore (Whitaker 1998).	There are two major haul-out areas used by Steller's sea lions in the King Range vicinity; Seal Rock, just north of the Mattole River Mouth at Cape Mendocino, and Sea Lion Rock, located approximately 5 miles south of the Mattole River Mouth; breeding is suspected.

Species in **bold type** indicate known presence in the project area.

2.9.2 Wildlife Management Issues/Practices

2.9.2.1 Threatened and Endangered Species Monitoring and Management

Since the listing of various species, BLM has conducted protocol level surveys for three of the listed species: snowy plover, marbled murrelet, and spotted owl.

Snowy Plover

Breeding season snowy plover surveys have taken place monthly at the mouth of the Mattole River and along gravel bars in the lower reaches of the river for the past four years. No snowy plovers have been detected, although there are historical records of detections during the winter season.

Marbled Murrelet

Given the extreme difficulty of finding nests, the Pacific Seabird Group developed a protocol for surveying for marbled murrelets at inland sites (Ralph et al. 1994, Evans et al. 2002) that included classification of forest stands based on the behavior of birds. Certain behaviors, including murrelets flying below the canopy, indicate an “occupied” stand. These occupied stands are treated as if they were nesting stands or activity sites. Protection guidelines and additional life history information presented in the Pacific Seabird Group protocol provide the basis for management of occupied stands. Forests supporting marbled murrelets are generally protected.

Between 1994 and 1999, BLM and Humboldt State University qualified personnel conducted 281 station-visits to attempt to detect marbled murrelets in the King Range. Approximately 3,231 acres of the best potential suitable marbled murrelet habitat out of a total of 7,356 of potential suitable habitat in the KRNCA was surveyed to current protocol. One visual fly-over detection in the Squaw Creek watershed (just north of North Slide Peak) was documented in 1995.

Spotted Owl

BLM is conducting protocol surveys of suitable habitat for baseline population information and to determine occupancy and status of owls in relation to proposed projects. Areas of unsurveyed suitable habitat remain and will be addressed by continued surveys (see Figure 2-12). Approximately twelve to fourteen spotted owl activity centers are known in the KRNCA. No timber harvests take place in these activity centers. The FWS is consulted on other project related activities in or near these activity centers.

2.9.2.2 Management Issues Involving Non-Sensitive Species

Black Bear

In recent years black bear (*Ursus americanus*) encounters have increased and become a visitor safety issue, especially along the Lost Coast Trail. This is partially due to the amount of refuse at the high use sites such as Big Flat. The BLM has implemented a program to reverse this trend. It includes requiring visitors to use a hard-side, bear-proof food storage container for storing food, trash, toiletries (e.g., soap, sunscreen, toothpaste), and other scented items. BLM has arranged rental canisters at the King Range Visitor Center, the Arcata Field Office, Shelter Cove Campground and Deli, and the Petrolia Store. To facilitate this policy BLM has posted information about bears and the canisters on the King Range website, field offices, and at trailhead kiosks.

King Range National Conservation Area



Roosevelt Elk

Historically, Roosevelt elk (*Cervus canadensis roosevelti*) naturally occurred in the King Range. Typically they prefer meadows for foraging but will forage in forested areas. A herd of Roosevelt elk was successfully introduced in 1983, and has become well established. This herd occupies the Sinkyone State Park and southern portion of the King Range. Although Roosevelt elk have made a remarkable recovery, this species remains extirpated throughout the majority of its historical range.



Roosevelt elk are often seen at Hidden Valley in the southern part of the KRNCA.

The public has great appreciation for this species and values its role in the ecosystem as a native large herbivore. Problems occur when elk interact with people or destroy personal property. Introducing elk to an isolated location in the middle of the King Range, near Big Flat, has been suggested as a way to reduce the interaction of the local residents with the elk. An introduction was planned but not implemented in this area in the 1980s. Currently, the California Department of Fish and Game (CDFG) is not considering additional introductions of out-of-state elk into California because of concerns regarding diseases, such as chronic wasting disease and brucellosis. Current state policy for northwestern California is to allow existing elk populations (Prairie Creek, Sinkyone) to expand naturally and repopulate their historic range. Although the Sinkyone herd has not expanded north into the KRNCA, the Prairie Creek herd has expanded significantly southward and eastward with elk now being reported as far south as Carlotta, approximately twenty miles northeast of the KRNCA. State biologists anticipate that this expansion will continue into additional suitable habitat (J. Dayton, pers. comm. 2003).

Columbia Blacktail Deer

Columbia blacktail deer (*Odocoileus hemionus columbianus*) are found throughout the King Range. They feed on leaves, buds, twigs, and grass and are found in all vegetation types in the planning area. The rut, or breeding season, begins in October in coastal Humboldt County. Although no specific data exists for the KRNCA, deer populations in Humboldt County are healthy and stable (J. Dayton, pers. comm. 2003).

Other Species

Surveys for martens (*Martes americana*) and fishers (*Martes pennanti*) were conducted in 1999 and 2000 using Trailmaster infra-red trip cameras at fourteen baited stations in King Range. The baited camera stations did not detect fisher or marten in the King Range area (Hawks 2000). As discussed earlier, the forested habitats of the King Range are dominated by Douglas fir and tanoak, a relatively dry habitat structurally similar to inland habitats which are not typically used by fishers or martens. The amount of suitable habitat for fishers and martens within the King Range is limited; furthermore each individual requires large areas of late successional/old growth habitat for their home range. There is not enough suitable habitat within the King Range to support a population of either fishers or martens, although they may occur in old growth habitats within the neighboring Humboldt Redwoods State Park.

Two non-native species occurring within/surrounding the King Range are of interest to game hunters. Texas turkey (*Meliagris gallopavo intermedia*) was introduced to the King Range as a game species in the early 1980s (BLM 1996). Although turkeys inhabit the eastern edge of the KRNCA, suitable habitat is limited. Similarly, wild pigs (*Sus scrofa*) occupy the oak woodlands on private lands surrounding the KRNCA, but almost no habitat is found within the King Range itself.

2.9.2.3 Hunting/Fishing/Collecting

The BLM manages fish and wildlife habitat in a manner consistent with CDFG regulations for all applicable fish and game species found in the King Range. The King Range Act states that “The Secretary shall permit hunting and fishing on land and waters under the jurisdiction within the boundaries of the recreation area in accordance with the applicable laws of the United States and the State of California, except that the Secretary may designate zones where, and establish periods when, no hunting or fishing shall be permitted for reasons of public safety, administration, fish and wildlife management, or public use and enjoyment. Except in emergencies, any regulations of the Secretary pursuant to this section shall be put into effect only after consultation with the appropriate State fish and game department.”

Seasonal and geographical regulations for fish and game species in the King Range are set by the state. Deer season is the most popular hunt. The King Range falls within the B-4 zone under CDFG Hunting Regulations. The hunting season in B zones runs from late September until late October. However, the season in the B-4 Zone was changed to run from late August until late September so that the hunting would end prior to the rut which occurs earlier along the coast than in the inland parts of the B Zone.

Additional wildlife game species hunted in the King Range are wild turkey (*Meleagris gallopavo*), blue grouse (*Dendragapus obscurus*), California quail (*Callipepla californica*), mountain quail (*Oreortyx pictus*), western gray squirrel (*Sciurus griseus*), and black bear (*Ursus americanus*). Furbearing species hunted are gray fox (*Urocyon cinereoargenteus*) and raccoon (*Procyon lotor*); a special trapping license is required if dogs are used to hunt these animals. Turkey and deer hunting occurs mostly in the northern portion of the King Range. Few bear are hunted annually.

A limited amount of surf fishing occurs along the coast during the permitted seasons. All of the coastal streams and much of the Mattole River are closed to fishing to protect salmon and steelhead populations.

Portions of the lower Mattole are open to catch and release steelhead trout fishing. Shelter Cove is a very popular port for ocean sportfishing for both bottomfish and salmon.

Abalone diving/collection occurs mostly south of the Mattole River to Punta Gorda Lighthouse, from various coastal access points in Shelter Cove, and principally in Mal Coombs Park. Some abalone diving also occurs along reefs offshore from the King Range, accessed from boats.

2.9.2.4 *Migratory Birds*

Of the approximately 900 migratory birds occurring in the United States, 122 were selected species of management concern at the national level; known as the U.S. Fish and Wildlife Service Migratory Nongame Birds of Management Concern (MNBMC), migratory bird species on this list occur within the KRNCA and contiguous lands. Birds on the MNBMC list known to occupy the King Range (either presently or historically) include white-tailed kite (*Elanus leucurus*), peregrine falcon (*Falco peregrinus anatum*), western snowy plover (*Charadrius alexandrinus nivosus*), northern spotted owl (*Strix occidentalis caurina*), Vaux's swift (*Chaetura vauxi*), olive-sided flycatcher (*Contopus cooperi*), Pacific slope flycatcher (*Empidonax difficilis*), and California thrasher (*Toxostoma redivivum*).

2.10 TERRESTRIAL ECOSYSTEMS AND VEGETATION

2.10.1 Introduction

The KRNCA consists of habitats that are both structurally and compositionally diverse. Steep coastal ridges that bar most coastal fog incursion, plus the prevailing easterly winds, help to create and maintain an unusual mosaic of plant communities and species assemblages. As a result, the area hosts a number of rare species, some of whom are almost entirely restricted to the King Range. Such a large block of coastal habitat is rare in California and the Pacific coast of North America at large. The rugged nature of the King Range and its remote location have discouraged high levels of development or timber extraction from the area, and have also protected it from much exotic vegetation establishment, and thus maintained a high level of integrity for these ecosystems.

2.10.2 Applicable Regulatory Framework

The 1994 Northwest Forest Plan amended all Federal land use plans, including the King Range plan, and established land allocations and standards/guidelines for management of habitat for late-successional and old-growth related species within the range of the northern spotted owl, including the KRNCA. All BLM actions are also subject to the requirements of the National Environmental Policy Act, Clean Water Act, Migratory Bird Treaty Act, and must be in accordance with the legal requirements set forth under Section 7 of the Endangered Species Act (16 U.S.C. 1536 (c)).

2.10.3 Habitat Types

Dominant habitat types found throughout the King Range consist of mixed evergreen and coniferous forests, chaparral, coastal scrub, coastal dunes, and coastal prairies (see Figure 2-13). Each of these is described in greater detail below. The discussion of these habitat types is consistent with Holland's *List of*

California Terrestrial Natural Communities Recognized by the California Natural Diversity Database (1999) and Sawyer and Keeler-Wolf's Manual of California Vegetation (1995).

2.10.3.1 Forested Habitats

The forested habitats in the King Range transition into grassland habitats in the north and chaparral habitats in the south to form a complex vegetation mosaic. Upland forested habitats within the King Range can be categorized as Douglas fir, Douglas fir–Tanoak, Tanoak, and Canyon Live Oak vegetation (Sawyer and Keeler-Wolf 1995). Plant species composition consists primarily of Douglas fir (*Pseudotsuga menziesii*), tanoak (*Lithocarpus densiflorus*), canyon live oak (*Quercus chrysolepis*), and madrone (*Arbutus menziesii*) in the overstory, with scattered sugar pine (*Pinus lambertiana*) at higher elevations. Knobcone Pine (*Pinus attenuate*) stands are found on drier sites in the southern part of the King Range, while Grand Fir (*Abies grandis*) occupies wetter sites on Prosper Ridge and in the Mill Creek drainage. Stand structural diversity varies throughout the King Range, as does species dominance in each vegetative stratum, and stands are often composed of two or more distinct canopy strata. Canopy height varies substantially from less than 30 meters in some locations to over 70 meters. Douglas fir is the predominant overstory and emergent tree species on the western slope with sugar pine as a co-dominant at higher elevations, whereas tanoak is the dominant forest species on the eastern slope. Tanoak, canyon live oak, madrone, and California bay (*Umbellularia californica*) dominate other forest canopy strata, and understory vegetation typically consists of evergreen huckleberry (*Vaccinium ovatum*), salal (*Gaultheria shallon*), sword fern (*Polystichum munitum*), and younger individuals of overstory species.

Various forest successional stages (i.e., pole; early-, mid-, and late- mature; and old-growth) are represented throughout the King Range and result from a combination of natural (e.g., fire, landslides, and other disturbance events) and anthropogenic (e.g., timber harvest or salvage operations) causes. On the western slope of the King Range, forested habitats are largely undisturbed due to the difficulty in accessing this area. Historically timber was extracted primarily from portions of the eastern slope of the King Range mostly during the 1950s and 1960s prior to the land being acquired by the federal government.

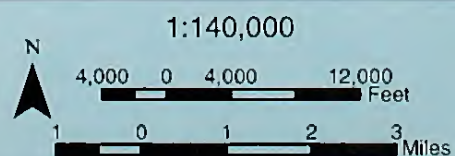
Douglas fir habitat supports a high abundance of wildlife (Mayer and Laudenslayer 1988). A number of amphibians do well in this habitat type, including the northwestern salamander, Pacific giant salamander, Olympic salamander, black salamander, clouded salamander, tailed frog, and ensatina salamander. Northwest coastal coniferous forests reportedly support higher bird densities than any other forest type in North America (Weins 1975, reprinted in Mayer and Laudenslayer 1988). Typical bird species include western flycatcher, chestnut-backed chickadee, golden-crowned kinglet, Hutton's vireo, solitary vireo, hermit warbler, varied thrush and spotted owl. Common mammals include deer mouse, dusky-footed woodrat, western red-backed vole, creeping vole, Douglas' squirrel, Trowbridge's shrew, and shrew mole.

[illegible]

Figure 2-13 Dominant Habitat Types



December 8, 2003 Source: US Department of the Interior, Bureau of Land Management, 2002; EDAW, Inc. 2002



Needle Rock

**Sinkyone Wilderness
State Park**



Late mature Douglas fir forest in Honeydew Creek drainage.

Small areas of coastal oak woodland habitats occur on the eastern edge of the KRNCA, with more extensive acreage on adjoining private lands in the Mattole Valley. This habitat type is home to at least sixty mammal species and 110 bird species (Mayer and Laudenslayer 1988), many of which include acorns for their diet. Several woodpecker species utilize this habitat, especially the acorn woodpecker. Acorn woodpeckers store acorns in granary trees, with the same tree often shared by a family for several generations. Western scrub jays similarly store or cache acorns that are often forgotten and end up germinating. California quail and wild turkeys also rely heavily on acorns during fall and winter. Many rodent species, such as dusky-footed woodrat and western gray squirrels, cache acorns, and deer and black bear also consume them. Oak woodland is also a rich habitat for herpetofauna, supporting approximately 20 reptile and amphibian species; the arboreal salamander, skinks, gopher snake, and slender salamander are common (Mayer and Laudenslayer 1988).

Vegetation associated with forested riparian areas is characterized as the Red Alder Series (Sawyer and

Keeler-Wolf 1995). This series colonizes substrates that are seasonally or permanently flooded or saturated, such as along the margins of perennial and ephemeral watercourses, and in some forests on the immediate coastline. Even-aged stands of deciduous tree species such as red alder (*Alnus rubra*) are typical of these habitats, with sword fern (*Polystichum munitum*), chain fern (*Woodwardia fimbriata*), and other herbs and shrubs dominating the understory. Such riparian habitats provide food, nesting, and migration/dispersal corridors for many wildlife species. Black salamander, tailed frog, and rubber boa are common herpetofauna (CWHR 2001). Common bird species include Anna's hummingbird, yellow-breasted chat, California yellow warbler, winter wren, orioles, black-headed grosbeak, and many other song birds. Typical mammals include Virginia opossum, skunks, raccoon, gray fox, and river otter (CWHR 2001).

2.10.3.2 Grassland Habitats

The grasslands that occur in the northern portion of the King Range and extend south along the coastline are characterized as coastal prairie and coastal terrace prairie by the California Natural Diversity Database (Holland 1999). These prairies exist on marine terraces within and beyond the zone of coastal fog incursion, and are typically underlain by sandy loams. The vegetation forms dense grasslands, usually less than one meter in height, composed predominantly of sod/tussock-forming perennial grasses in the California Oatgrass, Idaho Fescue, Pacific Reedgrass, Introduced Perennial Grassland, and California Annual Grassland Series (Sawyer and Keeler-Wolf 1995). These vegetation series are dominated by both native perennial grasses such as California oatgrass (*Danthonia californica*), Pacific reedgrass (*Calamagrostis*

nutkaensis), seaciff bluegrass (*Poa unilateralis*), and non-native annual and perennial grasses such as velvet grass (*Holcus lanatus*), hairy oatgrass (*Danthonia pilosa*), hedgehog dogtail (*Cynosurus echinatus*), bromes (*Bromus* spp.), and fescues (*Festuca* spp.). Isolated islands of native stands of Idaho fescue (*Festuca idahoensis*) and California melic (*Melica californica*) also exist along the coast and represent rare examples of remnant, unaltered coastal prairies.

The southern extension of the grasslands along the coast is periodically interrupted by coastal scrub and forested habitats. Introduced perennial grasses often inhabit mesic meadows and non-native annual species tend to favor more xeric and disturbed sites in these grasslands.

Herpetofauna typical of grasslands include red-legged frog, Pacific tree frog, western fence lizard, common garter snake, and western rattlesnake (Mayer and Laudenslayer 1988). Birds that commonly breed within this habitat include savannah sparrow and western meadow lark. Grasslands are important foraging habitat for the turkey vulture, northern harrier, American kestrel, white-tailed kite, peregrine falcon, as well as many song birds. Mammals that utilize this habitat include the black-tailed jackrabbit, Roosevelt elk, striped skunk, California vole, pocket gopher, and coyote.

2.10.3.3 Chaparral Habitats

Chaparral habitats in the King Range often occur along ridge-tops and other dry sites, where moisture availability is insufficient to support forested vegetation. These habitats are comprised of dense stands of fire-adapted plant communities such as those characterized as Blue Blossom, Manzanita, Chaparral Whitethorn, and Wedgeleaf Ceanothus Series (Sawyer and Keeler-Wolf 1995). Species such as manzanita (*Arctostaphylos* spp.), and ceanothus (*Ceanothus* spp.) dominate this habitat, where the vegetation rarely exceeds three meters in height. Chaparral often hosts species adapted for sites with unique or unusual edaphic conditions.

Shrubs within this habitat provide important shade during hot weather and moderate protection from wind and temperature in winter. Herpetofauna include Pacific tree frog, fence lizard, gopher snake, and rattlesnake. Birds common in chaparral habitats include turkey vulture, red-tailed hawk, California quail, and Anna's hummingbird. Elk, deer, brush rabbits, black-tailed jackrabbit, squirrel, voles, coyote, and striped skunk all utilize chaparral habitats.

2.10.3.4 Coastal Scrub Habitats

Coastal scrub habitats within the King Range are often found adjacent to coastal prairies or covering steep rocky terrain on the immediate coastline. Three main vegetative series can be found in the coastal scrub habitats of the King Range: Coyote Brush, Salal-Black Huckleberry, and Pacific Reedgrass Series (Sawyer and Keeler-Wolf 1995). Dominant species of this habitat type include coyote brush (*Baccharis pilularis* ssp. *consanguinea*), salal (*Gaultheria shallon*), evergreen huckleberry (*Vaccinium ovatum*), California blackberry (*Rubus ursinus*), Pacific reedgrass (*Calamagrostis nutkaensis*), and poison oak (*Toxicodendron diversilobum*). The vegetation in these habitats is dense, typically less than two meters in height, and potentially represents an intermediate vegetative successional stage. Currently, the only land use issues affecting the coastal scrub habitats are recreation and grazing.

The herpetofauna assemblage in coastal scrub is similar to surrounding habitats and may include Pacific tree frog, western fence lizard, common garter snake, and western rattlesnake. Bird species occurring in this habitat type include the California thrasher. Common mammals include fox, raccoon, and skunk.

2.10.3.5 Coastal Dune Habitats

The coastal dune habitat found at the mouth of the Mattole River represents a rare scenario, as European beachgrass (*Ammophila arenaria*), a common exotic invader along much of the Pacific coastline, has not yet become established. The vegetation supported by the unstable dunes is characterized as the Sand-Verbena-Beach-Bursage Series (Sawyer and Keeler-Wolf 1995). Mat-forming species assemblages include seashore bluegrass (*Poa macrantha*), beach sweet pea (*Lathyrus littoralis*), beach evening primrose (*Camissonia cheiranthifolia*), yellow sand verbena (*Abronia latifolia*), beach bursage (*Ambrosia chamissonis*), and the rare beach layia (*Layia carnosa*). Such habitats are often threatened by substrate stabilization caused by the establishment of non-native vegetation such as European beachgrass. Consequently this habitat is often associated with a sensitive flora. The dune habitats found at the mouth of the Mattole River are affected by human use as it is a popular area for coastal access and recreation.

Dune habitat is utilized by a diversity of fauna. Herpetofauna include Pacific tree frog and red-legged frog. Falcons, hawks, vultures, and owls hunt over the area; black-tailed jackrabbits, brush rabbits, striped skunks, porcupines, raccoons, gray foxes, deer mice, and Western harvest mice forage on dune vegetation.

2.10.3.6 Coastal Beach Habitat

Coastal beach habitat is located on the immediate coastline, between the mean high tide line and the water, where abiotic factors, rather than stabilizing vegetation, influence the landscape. High winds, waves, cyclic tidal inundation, and sand transport by littoral action restrict vegetative growth in this zone. Western and least sandpipers and semipalmated plovers commonly occur on fresh water pond edges and the beach waveslope. Other shorebirds such as whimbrel, sanderling, long-billed curlew, and marbled godwit forage along the wet sand of the waveslope. Western, California, and many other gull species commonly forage along the wrack line and roost on the waveslope. Brown pelicans and terns commonly utilize coastal beaches. Harbor seals and sea lions may haul out anywhere along the waveslope but prefer the larger intertidal and offshore rock outcrops.

2.10.3.7 Rocky Intertidal Habitat

The plants and animals that live in the rocky intertidal habitat must withstand pounding waves and, when the tide is out, hours of dryness. During low tide, small pools remain between the rocks. Animals such as crabs, anemones, urchins, abalone, snails, mussels, and barnacles thrive in this habitat. There are also many kinds of seaweed. When the tide comes in, larger animals like fish take advantage of the shelter and food these rocky settings provide.

Many of the rocks that are overwashed during high tide and heavy sea events are important feeding sites for black oystercatchers and a suite of wintering and migrating shorebirds such as black turnstones, surfbirds, wandering tattlers, whimbrels and, rarely, rock sandpipers. Brown pelicans, harbor seals, and sea lions commonly occur in these areas.



The intertidal habitat along the King Range coastline is very rich and diverse.

The intertidal zone is subject to extensive foot traffic which has the potential to cause resource damage. Recreation users access the tidepools, especially those in Shelter Cove, to view the readily visible marine life. The tidepools are also accessed extensively by abalone hunters. Harvest of abalone, mussels and other marine invertebrates as well as fish and marine vegetation are regulated by CDFG. Although no formal species surveys have been completed, the tidepools along the King Range Coastline are thought to be some of the most diverse on the California Coast (interview with Eileen Wolfe, Marine Biologist, 1998).

2.10.4 Vegetation—Existing Conditions/Species

Thirty-one sensitive botanical species are known to occur within the King Range, including one endangered species. Table 2-17 lists their names, status, preferred habitat types and occurrence or blooming period in the planning area. In addition, several species are listed which have not been documented in the KRNCA but the habitats they rely on has; they are included in this plan because they may yet be found in the area. Species names in the chart in **bold type** indicate known presence in the project area.

Table 2-17: Federally and State Listed/Proposed Endangered or Threatened, and BLM Sensitive Botanical Species

SPECIES	STATUS	PREFERRED HABITAT	OCCURRENCE / BLOOMING PERIOD
VASCULAR PLANTS			
<i>Astragalus pycnostachyus</i> var. <i>pycnostachyus</i> Coastal Marsh Milk Vetch Family: Fabaceae	Federal: None State: None BLM: Sensitive CNPS: List 1B	Coastal salt marshes or seeps <30m. Coastal dunes (mesic), marshes and swamps (coastal salt, stream sides); 0-30m.	The coastal marsh milk vetch was previously thought to have been extirpated from Humboldt County. It is currently known in Humboldt County from a single documented occurrence near the mouth of the Mattole River, and from fewer than ten occurrences in Marin and San Mateo Counties. Blooms April – October
<i>Calamagrostis foliosa</i> Leafy Reedgrass Family: Poaceae	Federal: None State: Rare BLM: None CNPS: List 4	<i>Calamagrostis foliosa</i> (leafy reedgrass) is a tufted perennial grass < 1 meter tall, found growing in coastal scrub and coniferous forest plant communities from Mendocino, Humboldt, and Del Norte counties. <i>C. foliosa</i> is often found growing in rocky substrates below 1,220 meters.	The majority of the documented locations of this species occur along the coast in the King Range.
<i>Castilleja affinis</i> ssp. <i>littoralis</i> Oregon Coast Indian Paintbrush Family: Scrophulariaceae	Federal: None State: None BLM: None CNPS: List 2	Coastal bluff scrub, coastal dunes, coastal scrub/ sandy; 15-100m. The distribution of <i>C. affinis</i> ssp. <i>littoralis</i> occurs in Mendocino, Humboldt, and Del Norte counties, and extends into Oregon.	Currently this species is known to occur in the vicinity of the King Range. Appropriate habitat exists throughout the coastal portion of the King Range and a historical occurrence was reported near the mouth of the Mattole River. Blooms June
<i>Castilleja mendocinensis</i> Mendocino Coast Indian Paintbrush Family: Scrophulariaceae	Federal: None State: None BLM: Sensitive CNPS: List 1B	Known only from coastal habitats in southern Humboldt and northern Mendocino counties. Specific habitat includes coastal bluffs, scrub, prairie, dune, and closed-cone coniferous forests, below 160 meters in elevation.	Although no occurrences of the Mendocino coast Indian paintbrush have been found within the King Range, the species has been documented on adjacent lands in habitat types that also occur throughout the King Range. Blooms April - August
<i>Epilobium septentrionale</i> Humboldt County Fuchsia Family: Onagraceae	Federal: None State: None BLM: None CNPS: List 4	<i>E. septentrionale</i> is generally found growing in sandy or rocky soils growing in forests dominated by both coniferous and/or broad-leaved species between 45 and 1,800 meters.	Many of the known occurrences for this species of the Humboldt County fuchsia have been documented along the Lost Coast Trail in the King Range and it is known from other locations in Mendocino and Trinity Counties. Blooms July and September
<i>Gilia capitata</i> ssp. <i>pacifica</i> Pacific Gilia Family: Polemoniaceae	Federal: None State: None BLM: Sensitive CNPS: List 1B	The preferred habitats for the Pacific gilia are coastal scrub and prairies below 300 meters. The distribution of <i>G. capitata</i> ssp. <i>pacifica</i> ranges from Mendocino,	This species is known to occur in the vicinity, and appropriate habitat exists throughout the coastal portions of the King Range, though it has not been

Table 2-17: Federally and State Listed/Proposed Endangered or Threatened, and BLM Sensitive Botanical Species

SPECIES	STATUS	PREFERRED HABITAT	OCCURRENCE / BLOOMING PERIOD
		Humboldt, and Del Norte counties, and extends north into Oregon.	documented within the King Range. Annual herb, blooms May-August
<i>Gilia millefoliata</i> Dark-eyed Gilia Family: Polemoniaceae	Federal: None State: None BLM: Sensitive CNPS: List 1B	<i>Gilia millefoliata</i> occurs in coastal dunes; 2-20m.	It has been documented in its preferred habitat within the King Range. Thought to be extirpated from San Francisco County, <i>G. millefoliata</i> ranges north through Marin, Sonoma, Mendocino, Humboldt and Del Norte counties in California, and into Oregon. Blooms April-July
<i>Lathyrus palustris</i> Marsh Pea Family: Fabaceae	Federal: None State: None BLM: None CNPS: List 2	This species is restricted to wetland habitats and mesic coastal environments, below 100 meters in northern California, Oregon, Washington, and elsewhere. It is listed as an obligate wetland species in California according to the U.S. Fish and Wildlife Service (National Wetlands Inventory 1997).	In California, occurrences of this species are limited to Del Norte and Humboldt Counties. It has been documented near Shelter Cove, and although limited habitat does exist, marsh pea is not known to occur within the King Range. Blooms March – August
<i>Layia carnosa</i> Beach layia Family: Asteraceae	Federal: Endangered State: Endangered BLM: Sensitive CNPS: List 1B	<i>Layia carnosa</i> (beach layia) inhabits coastal dunes and scrub habitats below 60 meters in elevation. This species is typically restricted to dune mat and foredune plant communities, but also occurs in lower densities along margins of lupine scrub, herbaceous hollows, trails, and open areas with moving sand.	Beach layia is only known to occur in Monterey, Marin, and Humboldt counties, and has been documented near the mouth of the Mattole River in the King Range. Blooms May – June
<i>Lilium occidentale</i> Western Lily Family: Liliaceae	Federal: Endangered State: Endangered BLM: Sensitive CNPS: List 1B	The preferred habitat of the western lily consists of openings in coniferous forests, freshwater bogs, fens, and marshes, in addition to coastal habitats such as bluffs, scrub and prairies below 185 meters in elevation. Reedgrass (<i>Calamagrostis nutkaensis</i>) is a common dominant plant species often found in association with <i>L. occidentale</i> .	Western lily is known only from Humboldt and Del Norte Counties in California and southern Oregon. It has not been documented in the King Range (closest verified occurrence is Table Bluff), but suitable habitat exists throughout the King Range. Threats include development, herbivory, grazing, vegetative succession, and horticultural collection. Blooms June and July
<i>Lilium rubescens</i> Redwood Lily Family: Liliaceae	Federal: None State: None BLM: None CNPS: List 4	Appropriate habitat for <i>Lilium rubescens</i> (redwood lily) includes chaparral and forests dominated by both broad-leaved and/or coniferous species. The redwood lily apparently can tolerate serpentine soils.	<i>L. rubescens</i> is believed to have been extirpated from Santa Cruz County, and currently its distribution extends from Sonoma County, north to Del Norte, and inland into Shasta County. Urbanization, horticultural

Table 2-17: Federally and State Listed/Proposed Endangered or Threatened, and BLM Sensitive Botanical Species

SPECIES	STATUS	PREFERRED HABITAT	OCCURRENCE / BLOOMING PERIOD
			collection, and grazing have been implicated in <i>L. rubescens</i> becoming increasingly rare in the southern portion of its range. Within the King Range the redwood lily is known to inhabit upland habitats. Blooms June - August
<i>Mitella caulescens</i> Leafy-Stemmed Mitrewort Family: Saxifragaceae	Federal: None State: None BLM: None CNPS: List 2	<i>Mitella caulescens</i> inhabits mesic shaded areas in meadows, and coastal and lower montane forests dominated by both broad-leaved and/or coniferous species between 610 and 1,700 meters.	To date, <i>M. caulescens</i> has not been documented within the King Range, although it is known to occur in the vicinity, including the Sinkyone Wilderness State Park. It has also been reported from elsewhere in California (i.e., Del Norte, Humboldt, Mendocino, Siskiyou, and Tehama Counties) in addition to Oregon and Idaho. Blooms May - July
<i>Montia howellii</i> Howell's Montia Family: Portulacaceae	Federal: None State: None BLM: None CNPS: List 2	Howell's montia inhabits vernally mesic sites below 600 meters on compacted soils such as vernal pools, roadsides, and cattle tracks. Known suitable habitat for <i>M. howellii</i> includes wet meadows, seeps, and north coast coniferous forests	Suitable habitat is abundant in the King Range. Although this species has not been documented within the King Range, there are multiple occurrences reported from the vicinity. Threats include road maintenance and construction and activities associated with timber harvest operations. Blooms March through May
<i>Oenothera wolffii</i> Wolf's Evening Primrose Family: Onagraceae	Federal: None State: None BLM: Sensitive CNPS: List 1B	<i>Oenothera wolffii</i> is known to occur in mesic, sandy soils below 800 meters in coastal bluff scrub, dune, and prairie habitats, and has also been reported from lower montane coniferous forests. This species is found along roadsides and consequently such occurrences are threatened by road maintenance and foot traffic.	This species is not known to occur in the King Range, but has been documented in the vicinity. The distribution of <i>O. wolffii</i> extends from Humboldt County north into Del Norte County and Oregon, and east into Trinity County. Blooms May-October
<i>Sidalcea malachroides</i> Maple-leaved Checkerbloom Family: Malvaceae	Federal: None State: None BLM: Sensitive CNPS: List 1B	Maple-leaved checkerbloom can be found below 700 meters on sandstone soils in coastal prairie, coastal scrub, broadleaved and/or coniferous forests, and in disturbed areas.	The distribution of this species is restricted to coastal regions in northern California and is thought to have been extirpated from southern Oregon. In California <i>S. malachroides</i> occurs from Santa Clara County, north to Del Norte County. It occurs in the King Range near the mouth of the Mattole River and associated public facilities.

Table 2-17: Federally and State Listed/Proposed Endangered or Threatened, and BLM Sensitive Botanical Species

SPECIES	STATUS	PREFERRED HABITAT	OCCURRENCE / BLOOMING PERIOD
			Blooms April – August
<i>Sidalcea malviflora</i> ssp. <i>patula</i> Siskiyou Checkerbloom Family: Malvaceae	Federal: None State: None BLM: Sensitive CNPS: List 1B	Habitat associated with known occurrences includes open coastal coniferous and broad-leaved forests below 700 meters, and coastal bluffs, scrub, and prairies.	Although not known from the King Range, this species does occur in the vicinity, and appropriate habitat occurs within the study area. Blooms May – June
BRYOPHYTES			
<i>Anomobryum filiforme</i> Family: Bryaceae	Federal: None State: None BLM: None CNPS: List 2	Suitable habitat for this species consists of mesic sites in upland forests dominated by coniferous and/or broadleaved species. <i>A. filiforme</i> can be found growing on moist rock and soil on outcrops, escarpments, and roadcuts between 100 and 1000 meters.	This species is not known from the King Range, but has been reported from the vicinity and is known to occur in Humboldt and Santa Cruz Counties in California, Oregon, and elsewhere.
FUNGI			
<i>Cantharellus subalbidus</i> White Chanterelle Family: Cantharellaceae	Federal: None State: None BLM: S&M Category D	This fungus species produces “fruiting bodies” from late summer through early winter that are highly sought after for human consumption. Exposed ridges and coastal mountains are a preferred habitat for <i>C. subalbidus</i> . Common vascular plant associates include manzanita (<i>Arctostaphylos</i> ssp.), madrone (<i>Arbutus menziesii</i>), and tanoak (<i>Lithocarpus densiflorus</i>).	<i>C. subalbidus</i> occurrence has been documented in suitable habitat of the King Range.
<i>Craterellus tubaeformis</i> Funnel Chanterelle Family: Cantharellaceae	Federal: None State: None BLM: S&M Category D	<i>Craterellus tubaeformis</i> is a fungus that is often collected for human consumption. This species can be found growing in humus, moss, or rotting wood in coniferous forests from late summer, and into winter.	<i>C. tubaeformis</i> occurrence has been documented in suitable habitat of the King Range.
<i>Choironomyces venosus</i> (<i>Fries</i>) <i>Th. Fries</i> Hard Truffle Family: Tuberaceae	Federal: None State: None BLM: S&M Category B	This species is often associated with Douglas fir, western hemlock (<i>Tsuga heterophylla</i>), and other members of the Pinaceae.	<i>C. venosus</i> occurrence has been documented in suitable habitat of the King Range.
<i>Clavariadelphus pistillaris</i> Common Club Coral Family: Clavariaceae	Federal: None State: None BLM: S&M Category B	This species produces sporocarps during the winter months and is predominantly found under hardwoods.	<i>C. pistillaris</i> occurrence has been documented in suitable habitat of the King Range.
<i>Otidea leporina</i> (<i>Batsc:Fries</i>) <i>Fuckel</i> Rabbit Ears Family: Otideaceae	Federal: None State: None BLM: S&M Category D	<i>Otidea leporina</i> is a cup-fungus that forms “ear-shaped” sporocarps between October and December. This species is typically associated with Douglas fir, western hemlock, and spruce (<i>Picea</i> ssp.) and assists in the decomposition of organic material.	<i>O. leporina</i> occurrence has been documented in suitable habitat of the King Range.
<i>Phaeocollybia californica</i>	Federal: None	<i>Phaeocollybia californica</i> is a fungus	<i>P. californica</i> occurrence has been

Table 2-17: Federally and State Listed/Proposed Endangered or Threatened, and BLM Sensitive Botanical Species

SPECIES	STATUS	PREFERRED HABITAT	OCCURRENCE / BLOOMING PERIOD
<i>A.H. Smith</i> (= <i>P. scatesiae</i>) Phaeocollybia Family: Cortinariaceae	State: None BLM: S&M Category B	that produces sporocarps (mushrooms) in March, May, October, and November. Common associates are Pacific silver fir (<i>Abies amabilis</i>), Sitka spruce (<i>Picea sitchensis</i>), Douglas fir, and western hemlock. <i>P. californica</i> is presumed to be an ectomycorrhizal associate with members of the Pinaceae.	documented in suitable habitat of the King Range.
<i>Phaeocollybia kauffmanii</i> <i>A.H. Smith</i> Giant Phaeocollybia Family: Cortinariaceae	Federal: None State: None BLM: S&M Category D	<i>Phaeocollybia kauffmanii</i> is a gilled Basidiomycete in the Cortinariaceae that produces sporocarps (mushrooms) from late September through early January. Common associates are Pacific silver fir, Sitka spruce, Douglas fir, and western hemlock. <i>P. kauffmanii</i> is presumed to be an ectomycorrhizal associate with members of the Pinaceae.	<i>P. kauffmanii</i> occurrence has been documented in suitable habitat of the King Range.
<i>Ramaria rubrievnescens</i> Marr & Stuntz Coral Mushroom Family: Ramariaceae	Federal: None State: None BLM: S&M Category B	<i>Ramaria rubrievnescens</i> is a coral fungus that produces sporocarps in June, September, and October. This species can be found in humus or soil and is associated with tree species in the Pinaceae.	<i>R. rubrievnescens</i> occurrence has been documented in suitable habitat of the King Range.
<i>Sarcodon fuscoindicum</i> (= <i>Hydnum fuscoindicum</i>) Violet Hedgehog Family: Hydnaceae	Federal: None State: None BLM: S&M Category B	<i>Sarcodon fuscoindicum</i> produces sporocarps in the fall and winter months. This species is often found in association with either coniferous trees in the Pinaceae, or broadleaved trees such as tanoak (<i>Lithocarpus densiflorus</i>) and madrone (<i>Arbutus menziesii</i>).	<i>S. fuscoindicum</i> occurrence has been documented in suitable habitat of the King Range.
LICHENS			
<i>Lobaria oregana</i> (Tuck.) Müll. Arg. Family: Lobariaceae	Federal: None State: None BLM: S&M Category A	<i>Lobaria oregana</i> is a foliose chlorolichen with localized colonies of cyanobacteria embedded in the thallus that allow this species to fix atmospheric nitrogen. <i>L. oregana</i> has been shown to contribute substantial amounts of nitrogen to forest ecosystems in the Pacific Northwest (Denison 1973).	<i>L. oregana</i> is largely restricted to late seral coniferous coastal forests in California, but is also found in the Cascades extending from California to Alaska, and is known to be sensitive to air pollution. It has been documented within the King Range.
<i>Pannaria rubiginosa</i> (Ach.) Bory Family: Pannariaceae	Federal: None State: None BLM: S&M Category E	<i>Pannaria rubiginosa</i> is a rosette-forming foliose chlorolichen. <i>P. rubiginosa</i> is found growing on the bark of both coniferous (e.g., Douglas fir, Sitka spruce, etc.) and hardwood (i.e., willows, ericaceous shrubs) vegetation in mesic	<i>P. rubiginosa</i> ranges from British Columbia along the Cascades, south into the coast range of California, and has been documented within the King Range.

Table 2-17: Federally and State Listed/Proposed Endangered or Threatened, and BLM Sensitive Botanical Species

SPECIES	STATUS	PREFERRED HABITAT	OCCURRENCE / BLOOMING PERIOD
		forested and thicket habitats. Although the distribution of this species is widespread, occurrences tend to be patchy and discontinuous.	
<i>Usnea longissima</i> Ach. Long-Beard Lichen Family: Parmeliaceae	Federal: None State: None BLM: S&M Category A	<i>Usnea longissima</i> is mostly restricted to coastal regions that receive substantial amounts of precipitation in the form of fog and rain (Esseen et al. 1981; Ahti 1977). In California, occurrences of <i>U. longissima</i> are known to be restricted largely to forests along the coast dominated by redwood (<i>Sequoia sempervirens</i>), Douglas fir (<i>Pseudotsuga menziesii</i>), and Sitka spruce (<i>Picea sitchensis</i>).	<i>U. longissima</i> has been documented in the King Range.

Species in **bold type** indicate known presence in the project area.

2.10.4.1 Invasive Plant Species

The establishment of nine species of aggressive, non-native plants have been documented within the King Range: *Ammophila arenaria* (European beachgrass), *Carduus pycnocephalus* (Italian thistle), *Cortaderia jubata* (pampas grass), *Cirsium vulgare* (bull thistle), *Silybum marianum* (milk thistle), *Raphanus sativus* (radish), *Senecio jacobaea* (tansy ragwort), *Cytisus Scoparius* (scotch broom), and *Euphorbia lathyris* (gopher plant). The establishment of these exotic species adversely affects native plant communities by out-competing the native vegetation and altering the edaphic conditions of native habitats. However, with the exception of pampas grass, which has colonized inaccessible bluffs on the coastal slope, the King Range is free of large weed infestations.

2.10.5 Current Vegetation Management Practices

2.10.5.1 Threatened, Endangered, and Other Sensitive Species

All known occurrences of sensitive species are currently monitored and managed under the various regulatory requirements covered above. The dune habitat along Mattole Beach is monitored annually for frequency and distribution of beach layia. Monitoring has indicated continuous population increases since the beach was closed to motorized vehicle use. Annual monitoring programs have also been recently initiated for coastal milkvetch and maple leaf checkerbloom.

2.10.5.2 Habitat Restoration

No specific native plant restoration efforts have been completed. Current habitat restoration efforts are primarily watershed enhancement projects related to salmonid habitat and road decommissioning.

2.10.5.3 Noxious Weed Eradication

Establishment of the nine species of noxious plant species mentioned previously has been documented within the King Range. The locations of these occurrences are currently monitored. Where infestations occur, eradication efforts have been implemented and are on-going. Specific efforts have focused on scotch broom, tansy ragwort, and European beach grass. All eradication has been through mechanical means, i.e., hand pulling. Herbicides and pesticides have not been used as a management tool in the King Range. The Lost Coast Trail and all grazing allotments have been mapped for invasive weeds. Where possible, prevention efforts have also been initiated, and focused mainly on education of visitors to identify and remove weed seeds from their clothing and equipment (and stock) before entering the King Range.

2.10.5.4 Sudden Oak Death

A specific management concern is the spread of sudden oak death to the King Range. Sudden oak death is a disease caused by a fungus-like pathogen (*Phytophthora ramorum*) that infects a wide variety of host species, but has only been found to cause mortality in a handful of these (e.g., tanoak, black oak, coast live oak, and others). Other infected species develop more benign foliar and twig infections, which serve as a major source of inocula. The propagules are most likely spread by wind blown rain.

The agent of dispersal of this pathogen is not yet understood and therefore the most appropriate measures to prevent its establishment in the King Range are not known. Extensive research is currently being done throughout the state that may inform future management needs at the KRNCA. Although sudden oak death has not yet been identified in the KRNCA, there is an occurrence in the vicinity, near Redway.

2.11 FOREST MANAGEMENT

2.11.1 Introduction

The Douglas fir forests of the KRNCA and surrounding Mattole Valley were bypassed for many decades as the region's timber industry focused on nearby redwood forests. Interest in Douglas fir timber increased in the 1950s with the post World-War II housing boom and the advent of tractor logging. After initial timber harvests of about nine million board feet, the original public domain lands included in the present KRNCA were placed under a moratorium for timber sales in 1965 pending the outcome of the conservation area proposal. The original KRNCA management program called for timber production in two of the management zones, both located on the eastern slope of the area, with a total allowable cut potential of 1.9 million board feet annually. The management program also called for a number of timber stand improvement projects, and reforestation of cutover private lands when acquired. However, only three timber sales have occurred since the KRNCA was designated, and all were fire salvage operations. These included two large salvage sales (2.8 and 3.5 million board feet) in Nooning Creek after the 1974 Finley Creek Fire and a small five-acre 0.024 million board foot sale along King Peak Road in 1988 following the Saddle Mountain Fire.

The full depiction of the present forest stand conditions in the KRNCA requires an understanding of the logging history of lands under private ownership that have been acquired by the BLM. The present public land acreage in the KRNCA is the product of a major land tenure adjustment program conducted in the 1970s and 80s. During this period, over 25,000 acres of private land was acquired through exchange and purchase. Most of the acquired lands had either been harvested historically, or were cut just prior to BLM acquisition. Harvest methods included high grading, or removal of the best trees, leaving scattered large Douglas fir trees. Reforestation was not practiced and a large percentage of the previously harvested acreage was left to regenerate naturally. Tanoak and madrone now dominate many lands that had once been old-growth Douglas fir forest. Several areas were planted upon acquisition by the BLM, including the Bear Trap Creek (125,000 Douglas fir trees on 200 acres since 1985), and Noonung Creek (500,000 Douglas fir seedlings).

In addition to timber, there are other special forest products utilized in the KRNCA, including the harvesting or collecting of mushrooms, firewood, beargrass, and other specialty products. None of these activities constitute major economic uses, but may be of cultural and/or subsistence value to the subgroups involved in their collection. Management decisions that affect availability of these products could have substantial effects on these communities. Demand for permits fluctuates somewhat from year to year, depending on the quality of the resource, but has remained fairly steady overall. Local residents have also expressed an interest in the continued availability of these products on a sustainable basis.

2.11.2 Applicable Regulatory Framework/Current Management

Authority for harvesting and sale of timber and other vegetative products on public lands is described under the Code of Federal Regulations Subpart 5400, Sale of Forest Products. Management direction and land use allocations for KRNCA forest resources is contained in the Northwest Forest Plan (NWFP) (1994) which amended the KRNCA Management Program. As stated above, under the NWFP, the KRNCA is managed as a late successional reserve (LSR) land use allocation. The purpose of these reserves are to represent a network of old-growth forests retained in their natural condition with natural processes allowed to function (including fire) to the extent possible. They are designed to serve a number of purposes including:

- Provide a distribution, quantity, and quality of old-growth forest habitat sufficient to avoid foreclosure of future management options.
- Provide habitat for populations of species associated with late successional forests.
- Help ensure that late successional species diversity is conserved.

Silvicultural treatments in late successional reserves must be “beneficial to the creation and management of late-successional forest conditions,” such as to help restore old-growth ecosystem conditions (1994 USFS and BLM Record of Decision for Late-Successional and Old-Growth Forest Standards and Guidelines). Objectives of silvicultural treatments include: 1) Development of old-growth forest characteristics including snags, logs on the forest floor, large trees, and canopy gaps that enable establishment of multiple layers and diverse species composition. 2) Prevention of large-scale disturbances by fire, insects, wind, and diseases that would destroy or limit the ability of the reserves to sustain viable forest species populations.

Under the NWFP, stand management in late successional reserves can include thinnings, underplanting, killing trees to create large woody debris, reforestation, and planting. In response to the NWFP, the BLM completed a Late Successional Reserve Assessment for the KRNCA in June, 1998.

2.11.3 Existing Conditions

2.11.3.1 Forest Stand Characteristics

The major forest vegetation type is a mixed evergreen forest of Douglas fir/tanoak/madrone. Due to the unusual climatic factors in the area, including the hot offshore winds in the summer and the associated absence of fog, it is thought that historic vegetation patterns were shaped primarily by moisture availability and the prevalence of lightning-caused and/or indigenous use of fire. Large continuous stands of late-successional or old-growth forests are thought to have been absent from this area (BLM 1998, citing Barbour and Majors 1977). (See Section 2.x, Terrestrial Habitats, for more detailed description of the species common in forest habitats.)

Though fragmented due to past land use practices, the KRNCA contains the second largest aggregation of old-growth lowland mixed evergreen forest in the California Coast Province. Figure 2-14 shows the vegetation by seral stage. The large areas of young hardwood dominated sites covering previously harvested lands in the KRNCA contribute little in the way of late successional old-growth values. These stands became established as a result of timber harvesting practices without any additional follow-up treatments. As a result these stands are lacking the necessary structure and species components to develop into the late-successional forest characteristics in the foreseeable future. On these sites additional forest treatments are desirable if the objective is to accelerate these hardwood stands to a more diverse late-successional stage. They are also extremely dense with heavy fuel loading (BLM 1998).

2.11.3.2 Mushrooms

While not much is known about the specific locations and other important population characteristics of mushrooms found in the KRNCA, it is known the area has at least 57 species of edible and/or commercially valuable mushrooms. Some of these include matsutake (*Tricholoma magnivelare*), chanterelles (*Cantharellus cibarius*), oyster mushrooms (*Pleurotus ostreatus*) and king boletes (*Boletus edulis*), which can fetch high prices in local and foreign markets. Matsutake are especially valuable and are used for ceremonial purposes in Japan. Three species of chanterelles, two species of hedgehog mushrooms and two species of coral mushrooms found in the KRNCA are managed as "Survey and Manage" species under the Northwest Forest Plan.

Mushrooms vary greatly in occurrence, abundance, and distribution from year to year and numerous factors influence fruiting. Forest age, composition, and structure likely constitute a major influence on wild mushroom occurrence and productivity. For example, in the King Range matsutake occur mostly in closed-canopy tanoak stands (50-150 years old) with scattered Douglas fir, madrone, and knobcone pine (Hosford et al. 1997). Forest management that affects the extent of this type of habitat could influence matsutake abundance and distribution. A variety of wildlife species, including deer and elk, consume wild mushrooms, but little is known about their role in these animals' diets.

In the KRNCA, mushrooms generally are collected within a relatively short distance from roads (i.e., people do not hike extensive distances to get to patches, particularly for commercial use), such as King Range Road, King Peak Road, Saddle Mountain Road. Collecting occurs primarily in tanoak stands. Harvesters generally operate independently, and sell the mushrooms they collect to wholesale buyers who set up shop in local motels during the mushroom season. Prices can fluctuate widely, depending on seasonal variations and regional availability, etc.

Interest in mushroom collecting is on the rise, particularly since the 1980s, as is international demand for matsutake in particular.²¹ With the overall decline of timber industry, increasing demand, and high value for the mushrooms, more people are picking commercially than in the past. Yet a great deal of scientific uncertainty exists regarding effects of harvest on mushroom ecology, diversity, reproductive habits, etc. Some biologists liken harvesting mushrooms to picking apples off trees, having no effect on the trees' productivity from year to year. Others express concern about potentially harmful activities, such as raking, trampling, or improper harvesting techniques, that could adversely affect the mycelium and reduce regeneration. While careful harvesting of mushroom caps and other portions of a mushroom's mycelium may avoid permanent damage to individual plants, there is growing concern that a large increase in harvesting and/or damage caused by uneducated or careless collectors could cause major adverse impacts to the KRNCA's mushroom populations. The USFS Pacific Northwest Research Station currently has a research program investigating productivity and sustainable harvest information for edible mushrooms in the region.

2.11.3.3 Other Specialty Forest Products

Other specialty forest products harvested in the King Range include madrone, tanoak, and Douglas fir collected and used as firewood. The BLM currently issues firewood collection permits on a case-by-case basis, usually for collection of downed wood on roadways after storms. Salal, huckleberry shrubs, and bay leaves are also collected from time to time, mostly for use in floral arrangements. Salal has attractive, dark green leaves and bell-shaped pink or white flowers and berries that hang like a necklace. The berries and leaves of the huckleberry are also attractive, and along with salal are collected for flower arrangements. Bay leaves are a popular spice for cooking and can be used to make wreaths. In addition, beargrass is collected by a small number of people for traditional basket-making and other indigenous crafts; please see the Cultural and Historic Resources section (Section 2.4) for further discussion.

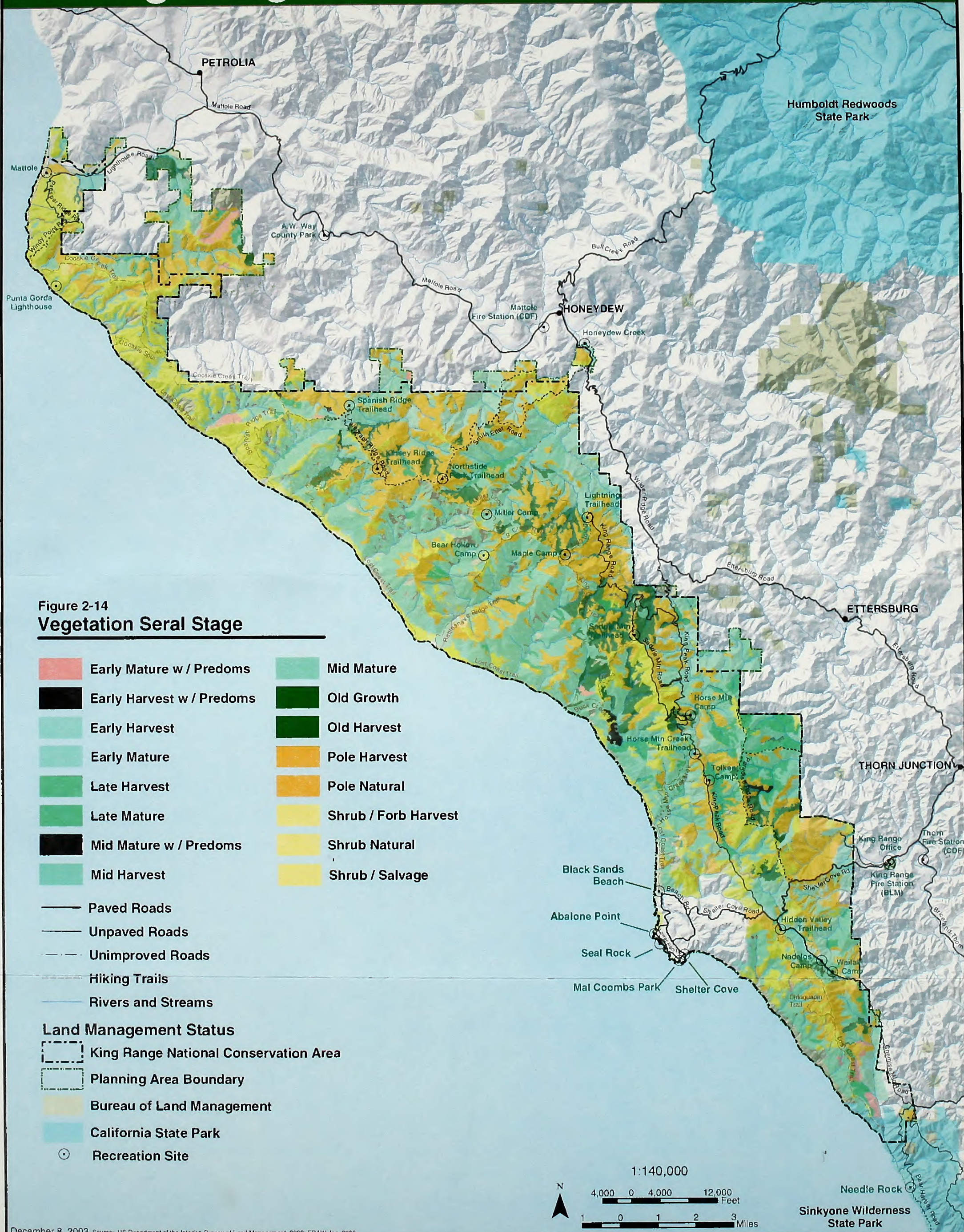
2.11.4 Current Management Practices

2.11.4.1 Forest Management

The potential timber harvest base was initially reduced through the 1988 designation of sections of the KRNCA as Wilderness Study Areas. Then, after the listing of the northern spotted owl as a threatened species, the remainder of the KRNCA was designated as a late successional reserve under the Northwest Forest Plan (NWFP) in 1994. This land use allocation does not prescribe/allow timber harvesting,

²¹ Japan began importing matsutake in mid-1970s, and this demand has increased dramatically since the mid-1980s. Imports from North America averaged 500,000 kg/year in 1997. Note that the King Range is south of the heaviest areas of commercial matsutake harvest, which are more in the Klamath Range and then north through the Cascades in Oregon to the Olympic Peninsula in Washington, as well as farther north in Canada (Hosford et al 1997).

King Range National Conservation Area



although thinning and other silvicultural treatments may be used in stands up to eighty years in age if the treatments are beneficial to the creation and maintenance of late successional old growth (LSOG) conditions (NWFP ROD at 8).

Under the NWFP, the King Range and adjoining lands in the planning area have 45,437 acres designated as late-successional reserves. Of these, 12,147 acres provides LSOG habitat (32 percent). An additional 15,688 acres are administratively withdrawn (i.e., already designated by existing plans), of which 4,622 acres contains LSOG habitat (21 percent). These administratively withdrawn lands are treated the same as late successional reserves for the purposes of management under the NWFP. The administratively withdrawn lands are on the western coastal slope which contains significantly less LSOG forest. A small parcel, 142 acres (Honeydew Creek Campground parcel) is classified as matrix, which technically allows timber harvest; however, this parcel contains a mixture of riparian forest and oak woodlands with no commercial timber. The forest resources in the King Range are currently managed to maintain and/or enhance late successional stand characteristics consistent with the NWFP.

Current management efforts are focused on improving the structure of previously-harvested, dense hardwoods stands to meet LSR objectives and better reflect historic vegetation conditions. Data collected in 1948 in the Honeydew Creek Watershed, prior to any large scale timber harvests, suggests a historic successional stage class distribution of approximately 60 percent late successional or old-growth stands, 20 percent mid-mature stands and 20 percent early successional stands (BLM 1996). This stand class breakdown will be used as a reference condition for forest management activities in this plan. Thinning treatments can be used to treat previously harvested stands to accelerate their development to late successional characteristics. Thinning of some forest stands is a desirable method of increasing the forest stand's structural complexity and thereby developing late successional forest characteristics. Treatments involve stem-density management and tanoak removal in sapling, pole, and early mature stands. All treatments provide for the retention of snags and large woody debris for the development of stand structure and diversity.

2.11.4.2 Special Forest Products Management

All specialty forest products are managed via a permit system, and the BLM generally issues between 50-80 permits per year for all uses. Permits are available for collecting almost any kind of greenery, as long as it is not an ecologically sensitive species. Mushrooms have a special permitting program because of their high commercial value.

The BLM issues both commercial and individual/personal permits for mushroom collecting, modeled on the U.S. Forest Service's permit program, and tries to coordinate with that agency so as to have similar specifications. These permits are not species-specific, but allow collection of any kind of mushroom under the conditions of the permit. Permittees are given a map for locations and special instructions and restrictions for collection (no driving off-road, no raking, etc.), and are required to post the permit on their windshield while collecting so that a passing ranger can see it.

Most of the commercial permittees in the KRNCA are Southeast Asians (Hmong/Laoians).²² Commercial permits are issued during a season of four to six weeks around the month of December (when the valuable matsutake are fruiting), and at any given time there are only thirty permits available. This limit is intended to prevent adverse effects on the resource while much is still unknown about the ecological effects of collection. Permits are available for a varying number of days, i.e., three, seven, or thirty days, or for the whole season, at a cost of \$25/week or \$100/season. According to BLM staff, people seem relatively content with this system. There is no weight limit on the amount one can collect with a commercial permit. The BLM requires one permit per commercial collector; whole families are not allowed to collect on a single permit.

Individual, non-commercial collection permits are allowed year-round, and are limited by weight at five pounds per day. Personal use collectors must cut matsutake mushrooms in a particular way so that they have no commercial resale value. Personal users are mostly locals who have become interested in mushroom collecting. Their numbers have gradually increased in recent years, but can fluctuate unpredictably from year to year.

In contrast, demand from commercial collectors is directly related to the prevailing market for mushrooms and the weather in December, the only month when commercial permits are available. Buyers set up shop in Garberville or Redway; it is unknown how collectors connect with sellers or distribute the mushrooms. BLM staff have not encountered any tension or violence with regard to collectors "claiming" particular territories.

The BLM also issues occasional firewood collection permits, primarily as a way to clear downed wood from roadways after a storm. Permittees can collect any wood that has been blown down and that can be reached without driving off the road. No cutting of standing trees is allowed. The BLM generally will issue up to ten permits per storm on a case-by case basis, and there is almost always a waiting list of people interested in permits. Commercial beargrass collection permits are also issued, usually about ten to twelve per year, at \$20 per permit.

2.12 GRAZING

2.12.1 Introduction

Use of the King Range for livestock grazing goes back to the earliest Euro-American settlers in the area, but the actual grazing-dependent ecology of California grasslands goes back much further. Grassland-grazing ecology in California evolved with native mammalian megafauna from ten thousand years to as far back as millions of years ago. The north coast of California has produced fossil evidence of mastodon, bison, and mammoth dated between 100,000 to 500,000 years old. Modern cattle (and much of modern grassland flora) were brought to California by the Euro-Americans in the mid-1700s (Burcham 1981) and are not native. However, their effect on grasslands, when properly managed, can mimic the impacts of prehistoric and native megafauna.

²² Amaranthus and Pilz (1996) note that "recent immigrants can harvest mushrooms profitably without the language skills and education required for other jobs" (at 45). Also many wild mushrooms (particularly matsutake) collected commercially are sold to Asian markets, both in Japan and in Asian communities across the western U.S. and Canada, and so there may be some traditional/cultural connections to the activity as well.

Light to moderate grazing in productive grasslands and during the proper season can conserve the biodiversity of plants and wildlife. An inverse relationship exists between dominance and diversity regardless of the plant community described. If dominant plant species can be reduced in some manner, rare and infrequently encountered (i.e., subdominant) species can increase. Generalist grazers such as domestic cattle and bison tend to increase species diversity by reducing dominant species through non-preferential foraging. In contrast, non-generalist grazers such as deer, rabbits, and voles can decrease biodiversity because they eat selectively which can heavily impact subdominant plant species. When considering biodiversity in grasslands, these kinds of non-generalists can be harmful without light-to-moderate grazing from large ungulates, domestic or otherwise. Failure to permit some grazing in productive grasslands typically results in dramatic decreases in subdominant plant species diversity (Howe 1999).

Sustaining healthy biodiversity depends on balance. In the King Range, there is light to moderate grazing in portions of the grasslands, and although there are deer, rabbits, and plenty of rodents, there are also large populations of raptors such as hawks, vultures, and falcons, as well as coyotes, bear, mountain lion, and other predatory animals that help balance subdominant grazers.

2.12.2 Applicable Regulatory Framework

Grazing Use for the King Range planning area is regulated by the Code of Federal Regulations, Part 4100—Grazing Administration and the Northwestern California Standards for Rangeland Health and Guidelines for Livestock Management. Grazing use will be consistent with the goals and objectives described in the King Range Act of 1970 (PL 91-476).

2.12.3 Existing Conditions and Management Practices

2.12.3.1 Early Grazing History

The BLM does not have records for grazing use prior to the 1950s, but there are anecdotal reports of year-round sheep grazing numbering into the thousands on private lands in the area. Since roughly 1900, sheep and wool production had been increasing all along the North Coast, as predation by coyotes was controlled for decades by government-sponsored predator control programs (Roscoe 1977). By 1920, fully one-third of the rangeland in Humboldt County had converted to wool production, with a woolen mill constructed at Eureka exporting up to 500,000 pounds of wool annually (Nash 1996). But by the 1950s and '60s the changing state environmental laws and the end of federally-sponsored predator control programs pushed many operators away from sheep, despite high wool prices, and into cattle markets (Criley 2003).

This trend wasn't immediately evident in the King Range; in 1983 there were still about 1300 sheep on public lands, in addition to about 300 cattle. However, over the coming decade, sheep grazing did gradually phase out, and by March of 1994, the last 60 sheep were gone leaving cattle as the sole livestock type.

By 1983, the BLM had acquired a number of new parcels that included active grazing lands, and so issued a number of new grazing leases. These leases authorized a total of 2,971 Animal Unit Months (AUMs)

within the KRNCA, and are the same allotments that are still in effect today. Since 1983, BLM has reduced the number of AUMs authorized to 2,050, representing a decrease of 921 AUMs. This reduction resulted partly from the expiration of leases in several allotments that were never grazed (Big Flat at 60 AUMs), or that had converted back to forest types unsuitable for grazing (Bear Trap 400 AUMs, Etter Lease 8 AUMs, and Jewett Ridge 13 AUMs), representing a total of 483 AUMs. These inactive allotments are discussed further in Section 3.12.4. Of the remaining 440 AUMs, 300 AUMs were reduced at the Strawberry Rock allotment and 255 AUMs reduced at Windy Point allotment, where livestock numbers and the season of use were reduced to promote resource health—leaving a deficit of 115 AUMs. This is accounted for by a 115 AUM increase in the Spanish Flat allotment.

2.12.3.2 Current Allotments, Use and Conditions

Approximately 11,100 acres of the KRNCA are currently grazed, divided into four allotments (see Figure 2-15). A total of 2,050 AUMs of forage is available for domestic livestock use; however, approximately 1,500 AUMs are actually utilized in an average year, by about 220 cattle. Lessees on the four allotments are issued ten-year leases, which are reviewed before being renewed. These leases contain terms and conditions that define grazing intensity and season of use required to meet rangeland health standards or any other pertinent resource objective.

- **Strawberry Rock Allotment:** 550 acres, 300 AUMs, 37 yearlings/cow calf pairs; season of use: Sept. 15 – May 15. Actual use in 2002: 38, 9/10-5/23, 320 AUMs. All standards and guidelines for rangeland health received a “met” rating as of November 1998.
- **Windy Point Allotment:** 300 acres, 105 AUMs, 6/cow calf pairs; season of use: September 15 – May 15. Actual use in 2002: “non-use.” All standards and guidelines of rangeland health were “met” as of December 1998.
- **HJ Ridge Allotment:** 1,160 acres, 540 AUMs, 50/95 yearlings/cow calf pairs; season of use: #50 at Oct. 1- Feb. 28 and #95 at March 1 – June 15. Actual use in 2002: 44 cattle, 1/11-6/29, 241 AUMs (actual use on this allotment has run at half or less of the AUMs capacity allowed for by the lease since 1989). All standards and guidelines of rangeland health received a “met” rating as of November 1998 with the exception of the Riparian/Wetland standard which received a “not met and not progressing towards” rating. Failure to meet this standard was based on the following: “The one lentic site identified as not meeting the standards is a trampled, seasonal water collection area that as far as anyone’s living memory, has always appeared as it does today. It should be noted that this is a very small site approximately 30 square feet in size in an allotment 1160 acres in size. The priority for corrective action was determined to be low.
- **Spanish Flat Allotment:** 9,100 acres, 1,105 AUMs, 145 yearlings/cow calf pairs; season of use: November 1 – May 31/June 30. Actual use in 2002: 129, 11/25 – 6/30, 912 AUMs. A rangeland health assessment was completed for this allotment in December 1998. The Biodiversity standard was “met,” the Soils Health and Riparian/Wetland standards were “not met but progressing towards,” and the Water Quality standard was “not met and not progressing towards.”

The water quality standard was “not met and not progressing towards” for reasons that may be independent of livestock grazing. Summer water temperatures in Cooskie Creek tend to exceed state water quality standards which may be caused by the bedrock of the stream, the morphology

King Range National Conservation Area



of the watershed, and annual winter flushing of the system including any new stream bank vegetation. It is unknown if grazing is impeding to some degree, the natural rate of recovery for the watershed.

The Soils Health standard was found to be “not met but progressing towards” because of the following: “Soils are generally healthy over most of the area. However, in the uplands there are problems with lack of plant cover which leaves areas susceptible to wind and rain erosion. This condition may have been created or exacerbated by historical overgrazing by sheep, or it is possible that a degree of ridgetop vegetation reduction is natural. There are rills and numerous gullies that are actively eroding in many areas. Granted, this grazing allotment is very steep so inherent gullying is likely. It does not appear, however, that current levels of grazing use are contributing to these conditions. Residual dry matter was collected in all the key grazing areas and lbs/acre exceeded all guidelines for residual mulch, the mean being about 3,000 lbs/acre.”

The Riparian/Wetland standards were “not met but progressing towards” for Cooskie, Spanish, and Randall Creeks. A full length analysis was included in the 1998 Environmental Assessment.

Since this rangeland health assessment, half of the Spanish Flat allotment has not been grazed due to cultural and water quality issues. Cooskie Creek has been fenced and the Spanish Flat pasture, that includes Spanish and Randall creeks are being rested.

2.13 FIRE MANAGEMENT

Past fires have been instrumental in shaping the current vegetative patterns and fuel conditions on the KRNCA. Fire will continue to be a key element of vegetative conditions in the area, particularly for maintaining or improving grasslands, chaparral, and other fire-adapted communities. Despite these beneficial aspects, fire—particularly very hot and intense fires—can also be a negative force, posing a serious threat to the human improvements, visual opportunities, wildlife, and vegetative communities existing throughout the area.

2.13.1 Applicable Regulatory Framework

The BLM is the principal agency responsible for fire protection in the KRNCA. To fulfill its responsibility for fire protection, the agency has entered into a cooperative fire protection agreement that includes BLM-California and Nevada; U.S. National Park Service, Pacific-West Field Area; U.S. Forest Service, Regions Four, Five and Six; and the State of California Department of Forestry and Fire Protection (Cooperative Protection Agreement 1997). An extension of this agreement is the preparation and execution of an annual operating plan between the BLM field offices (Arcata, Bakersfield, Redding, and Ukiah), the CDF Northern Region and U.S. Forest Service, Mendocino National Forest. This agreement sets the framework for CDF to provide resources for the suppression of all wildfires occurring within the KRNCA. A BLM fire resource unit provides for prevention/suppression in addition to CDF. Specific regulations and agreements that affect fire management include:

- BLM Handbook H-9211-1 Fire Management Activity Planning
- BLM Handbook H-9214-1 Prescribed Fire Management Handbook

- Cooperative Fire Protection Agreement between BLM and CDF (January 1, 2002)
- Cooperative Fire Protection Agreement Operating Plan between BLM, CDF Northern Region, and U.S. Forest Service (2002)
- King Range Fire Management Plan (1992)

2.13.2 Existing Conditions

2.13.2.1 *Historic Fire Patterns*

Throughout all of California, lightning fires have occurred naturally for untold years. Native Americans have existed in this area for at least 2,000 years and used fire to actively manage the landscape. The earliest U.S. settlers and ranchers came into the area about 1850, and also burned grasslands to improve range for their cattle and sheep, yet the use of fire gradually decreased as the area became more settled, and active suppression of wildfires increased.²³ Research conducted in the neighboring Sinkyone Wilderness State Park indicates that coastal prairie areas were historically more prevalent; about 300 acres of this vegetative type exist today, but evidence shows that it covered roughly 450 acres during earlier periods (Bicknell, Biggs, Godar, and Austin 1993). This research suggests that the reduction in this type of fire application (broadcast burning) has contributed to encroachment of other species into the grassland areas that exist today.

Fire frequency and fire interval research has not been conducted specifically on the KRNCA. However, some parallels can be found in research conducted in the Douglas fir and coast redwood forests at Point Reyes National Seashore (Brown, Kaye, and Buckley 1999). Examination of charcoal layers in the soil revealed a pattern of frequent surface fires in the area over a period of several centuries, with a mean return fire interval, or fire frequency, averaging between eight and nine years. These fires functioned to maintain more open forest stands by killing young trees before they could become established. Frequent fires on forest margins also would have tended to maintain the relative position of forest/grassland or forest/scrubland ecotones. The study concluded, “Historical references and records of vegetation patterns on the California coast in the vicinity of Point Reyes document less forest on the coastal hill than at present.”

The study also found that interruption of this fire cycle had caused shifts in forest structure and changes in fuel loads, leading to stand replacement crown fires which have become more prevalent in recent times: “In the absence of human ignitions, it is likely that fires would not have been as common. Lightning ignitions are rare for this area, especially during the later summer/early fall period when grasses and herbaceous fuels cure and the majority of fires occurred. However, regardless of the source of ignitions in pre-settlement or early settlement fire regimes, forests of the Point Reyes Peninsula are not burning today with nearly the frequency they did in the past. Shifts from understory to overstory dominance, increases in fuel loads, and changes in forest structure (i.e., increases in “ladder fuels”) may lead to increased incidence of overstory, stand-destroying fires that have been documented in other forests that experienced frequent surface fires prior to widespread non-Native American settlement (e.g., Covington et al. 1994). Conversion of grasslands to forest also will continue in the absence of fires”

²³ Also see ethnographic information in Appendix of Honeydew Creek Watershed Analysis (BLM 1996), with interviews of old-time residents talking about set fires and frequency.

(Brown, Kaye, and Buckley 1999). These conditions are similar to the existing conditions today in the KRNCA.

2.13.2.2 Current Fuel Conditions

No existing data is available for determining fuel load conditions and no current sampling is planned. However, local fire management personnel estimate that current fuel loads exist in a range that varies from 80 to 200 tons/acre. Visual observations reflect a variety of fuel conditions, including areas having both sparse and heavy duff/litter layers. Some areas have little to no existing ladder fuels, while other areas have very heavy ladder fuels, conditions that allow wildfire to reach into the canopy structure of stands.

2.13.2.3 Recent Fire History

An examination of large wildfires (300+ acres) that occurred in the KRNCA area between 1950-2001 reveals a total of 18 fires, or an average of 0.35 large wildfires per year (see Figure 2-16). These fires were mostly started during extreme drought periods and/or periods with heavy dry lightning concentrations, and often under northeast to east wind conditions. The King Fire of 1990, which burned about 3,500 acres within the KRNCA boundary, occurred when roughly 35 individual lightning fires came together to form a single large fire. An example of a human-caused fire was the Saddle Mountain Fire of 1988, burning about 6,000 acres within the area. The Finley Creek Fire of 1973 was also human-caused; it began on private land and burned into the KRNCA, covering a total of about 11,000 acres with approximately 2,500 acres burning in the KRNCA.

Most recently, a thunderstorm on September 3, 2003, resulted in 59 lightning-ignited fires in Humboldt County. Most of these fires were contained within the first week; however, due to remote and extremely steep terrain, two fires, the Honeydew Fire in the KRNCA, and the Canoe Fire in nearby Humboldt Redwoods State Park, proved difficult to control. Both fires continued to grow, and by the time they were each contained, the Canoe Fire had burned 11,200 acres, and the Honeydew Fire burned 13,778 acres. Suppression costs for the two fires exceeded \$34 million, with an estimated 40 percent (\$13.6 million) expended on the Honeydew Fire.



The 2003 Honeydew Fire was the largest ever recorded in the King Range NCA, burning almost 14,000 acres.

The Honeydew Fire was a 100-year event for the KRNCA. The entire fire burned in the King Range Wilderness Study Area (WSA). Extreme fire behavior threatened the community of Shelter Cove, so approximately four miles of bulldozer lines were constructed within the WSA. Preliminary observations indicate that the fire was a stand-replacing event over large portions of the burn area.

During the period of 1981-2003, a total of 44 fires were reported to have occurred on the KRNCA. Humans caused all but eight of these fires. No fires were reported on the King Range during the years 1980, 1982, 1985, 1986, 1987, 1989, 2000, and 2002 (see Appendix F for detail). Table 2-18 represents a summary of the size in acres and cause for fires that occurred during the 23-year period.

**Table 2-18: Fire Size by Acre Distribution and Cause
(Classification, 1980-2003)**

SIZE BY ACRES	HUMAN	LIGHTNING	TOTALS
0 – 10	29	4	33
11 – 100	3	1	4
101 – 300	1	1	2
301 – 1000	2	0	2
1001 +	1	2	3
Totals	36	8	44

A breakdown of these wildfires by size class reflects an average of 1.91 fires of all sizes per year for this period. Of the 44 fires, 33 fires ranged between 0.1 and 10 acres in size, with 19, or slightly under half, burning in the 0.1-acre category. An average of 0.22 fires per year was found to occur when combining all of the size classes greater than 300 acres.

The number of wildfires reported on the KRNCA is rising as reflected by data in Table 2-19, which reflects the number of incidents on a decadal basis, by human and lightning causes:

**Table 2-19: Distributions of Wildfires by Decadal Period
and Cause Classification**

PERIOD	HUMAN	LIGHTNING	TOTALS
1980 - 89	6	8	6
1990 - 99	25	3	28
2000 - 03	5	5	10
Totals	36	8	44

King Range National Conservation Area

The map displays the King Range National Conservation Area, highlighting fire history by decade and land management status. The area is bounded by the Pacific Ocean to the west and south, and the San Geronimo Mountains to the east. Key locations include Petrolia, Honeydew, Ettersburg, and Thorn Junction. The map shows various trails, roads, and landmarks such as Punta Gorda Lighthouse, A.W. Way County Park, and Humboldt Redwoods State Park. The fire history is color-coded by decade: 1950-1960 (orange), 1961-1970 (blue), 1971-1980 (grey), 1981-1990 (yellow), and 1991-2001 (red). Fuel breaks are indicated by red lines. Land management status is shown with different patterns: King Range National Conservation Area (dashed line), Planning Area Boundary (solid line), Bureau of Land Management (light green), California State Park (light blue), and Recreation Site (circle with a dot). The map also includes a scale bar (0 to 12,000 feet and 0 to 3 miles) and a north arrow.

**Figure 2-16
Fire History**

Fire History (By Decade)

- 1950 - 1960
- 1961 - 1970
- 1971 - 1980
- 1981 - 1990
- 1991 - 2001
- Fall 2003 Fires
- Fuel Breaks

Land Management Status

- King Range National Conservation Area
- Planning Area Boundary
- Bureau of Land Management
- California State Park
- Recreation Site

Map Labels:

- PETROLIA
- Mattole
- A.W. Way County Park
- Punta Gorda Lighthouse
- Mattole Road
- Mattole Fire Station (CDF)
- HONEYDEW
- Honeydew Creek
- Bull Creek Road
- Spanish Ridge Trailhead
- Kinsey Ridge Trailhead
- Northside Peak Trailhead
- Miller Camp
- Bear Hollow Camp
- Maple Camp
- Honeydew Fire
- Saddle Mt. Trailhead
- Ten Fire
- Horse Mtn. Creek
- Tolkan
- Ettersburg Road
- ETTERSBURG
- THORN JUNCTION
- King Range Office
- Thorn Fire Station (CDF)
- King Range Fire Station (BLM)
- Hidden Valley
- Nadelos
- Wailaki
- Chiquien Trail
- Mal Coombs Park
- Shelter Cove
- Shelter Cove Road
- Black Sands Beach
- Abalone Point
- Seal Rock
- Needle Rock
- Sinkyone Wilderness State Park

Scale:

- 4,000 0 4,000 12,000 Feet
- 1 0 1 2 3 Miles

December 8, 2003 Source: US Department of the Interior, Bureau of Land Management, 2002; EDAW, Inc. 2002

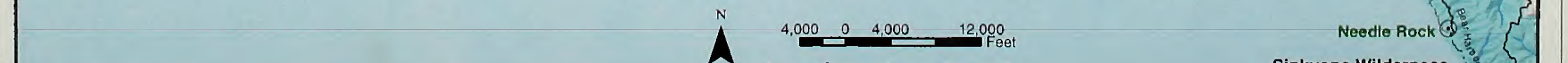
Figure 2-16 Fire History

Fire History (By Decade)



Land Management Status

-  King Range National Conservation Area
 Planning Area Boundary
 Bureau of Land Management
 California State Park
 Recreation Site



Two decades of fire history are represented in Table 2-19 beginning with the year 1980. The period of 2000-03 (only four years) has been added to bring the number of incidents in alignment with the total numbers of incidents reflected in Table 2-18. It can be seen from the values in Table 2-19 that lightning occurrences are not very common. This fact is also reflected by the data from the study reports cited above. However, the number of human-caused fires is significant. Humans caused 36 of 44 fires (82 percent) of the total fires that have occurred over the 24-year period. Some years there have been no incidents reported. However, it is evident from this data that human caused fires are increasing. There is a four-fold increase in human caused fires in the 1990 decade when compared against the 1980 decade.

Recreation use has increased along the coastal strip greatly since the KRNCA was established. With this increasing use, a corresponding increase in human caused wildfires has occurred along the coast. To try to reverse this trend, in 2002 the KRNCA began providing the services of a backcountry ranger. That year the ranger extinguished approximately 24 illegal or unattended campfires. Those fires were found mostly in the beach area and were in a smoldering state. There were no wildfires ignited by recreation visitors during the first year of this program. It should be noted that although the majority of human caused wildfires in the KRNCA have been caused by recreation visitors, almost all of these fires have been small and limited to the coastal slope. In contrast, most of the large devastating wildfires began on private lands east of the KRNCA and spread onto public lands, or from lightning strikes on the ridgetops. This can be attributed to the fact that severe fire conditions are associated with offshore wind conditions.

The data presented above points to a situation where increased human use simultaneously increases the potential of fire starts beyond naturally-occurring lightning events. Increasing numbers of fires also increase the concern that large damaging stand-replacement fires will occur. The combination of steep terrain and heavy fuel accumulations (excessive stems per acre, ladder fuels, and dead and down fuels) set the stage for such fire events to occur. This is particularly so under extreme drought and lightning conditions that periodically occur throughout this area because of natural weather phenomena.

2.13.3 Current Management Practices

2.13.3.1 *Presuppression*

The BLM has undertaken a gradual increase in developing a fuels management program. Some efforts have begun on the coastal prairie grassland areas to reduce the Douglas fir encroachment. The activities have included removal of Douglas fir saplings and small pole-sized trees to eliminate competition. Little to no prescribed fire (broadcast burning) applications have occurred. Instead, slash has been cut, piled, and burned, which is labor intensive and costly work. A shaded fuel-break system is an integral part of BLM's suppression planning, and is approximately twenty miles long. The system is currently about 55 percent completed (see Figure 2-16).

Past use of prescribed fire (broadcast burning) by the BLM has been very limited. Areas do exist providing the opportunity to use prescribed fire (broadcast burning and pile burning) to reduce tree and brush encroachment into existing coastal prairie areas. There are other areas that have opportunities for the use of prescribed burns. Areas adjacent to shaded fuel-breaks could be treated to enhance the beneficial aspects of the fuel-breaks by using prescribed fire applications. Some areas exist along the

wildland-urban interface where prescribed fire could be used to protect against wildfires encroaching into or from private land holdings when coupled with shaded fuel breaks (see Figure 2-16).

As mentioned earlier, in 2002 the BLM added the position of backcountry ranger, which supplements its ongoing fire prevention program. The program depends heavily on fire prevention signing and personal contact with local residents and other users of the KRNCA.

2.13.3.2 Suppression

CDF, by agreement with the BLM, has the principal responsibility for suppressing wildfires. CDF has a station located just west of Honeydew, and a second one in Whitethorn. The BLM has an engine at the King Range Fire Station located just west of Thorn Junction. There are other resources available from CDF such as an air tanker at Rohnerville and a helitack and helicopter unit at Kneeland. Additional engines, hand crews, and aircraft suppression resources are available as needed. The Cooperative Fire Protection Agreement is the legal structure for all suppression agencies to provide resources when needed. This agreement is connected to what is nationally referred to as the “total mobilization concept.” Access for suppression resources into the entire KRNCA is somewhat limited by its extreme ruggedness, remote nature, and steep topography.

2.14 TRANSPORTATION AND ACCESS

2.14.1 Introduction/Overview

The region surrounding the KRNCA became known as “the Lost Coast” based on the difficulty of road building across the area’s rugged landscape. Highway engineers building California Coastal Route 1 were forced inland by the harsh terrain at the southern end of the Lost Coast, about 20 miles south of the KRNCA. U.S. 101, the primary access route through northwestern California, passes 20 miles inland from the KRNCA. Only steep winding secondary roads penetrate the remote mountains of the Lost Coast region. Three Humboldt County roads provide the primary access from U.S. 101 to the KRNCA, and a combination of County and BLM roads provide access within the NCA. The rough terrain, highly erosive soils, frequent seismic activity, and high rainfall combine to create challenges for both use and maintenance of the road system.

2.14.2 Specific Mandates and Authority – Regulatory Framework for Transportation

Vehicle use in the KRNCA is managed under the following direction and authority: 43 CFR Part 8340 Off-Road Vehicles, Subpart 8342, Designation of Roads and Trails.

All BLM lands in the planning area are designated through the land use planning process as open, limited, or closed to vehicle travel under the BLM Off-Highway Vehicle (OHV) Regulations. Under this system, in an “Open Area” all vehicle types are allowed to access all parts of an area (including cross-country travel) at all times. In a “Limited Area” vehicle use is allowed only during certain times of year, by certain types of vehicles, and/or in certain parts of the area such as designated roads and trails. Vehicle use is not allowed in closed areas. The OHV regulations apply to use of routes by the general public. Certain

other routes may be open to private inholders, grazing or other permittees to meet specific access needs or legal rights.

Existing OHV designations are outlined in the “No Action” alternative of this plan (see Chapter 3). Current vehicle management is based on the 1986 *King Range Transportation Plan and Supplement*. This plan addressed a variety of concerns related to vehicle use, roadways, and resource protection, and provided guidelines for future road improvements, maintenance activities, and management decisions. The 1986 Transportation Plan identified several management objectives:

- Objective 1—Obtain or assure public rights for recreation use of all suitable lands in the King Range.
- Objective 2—Provide safe and orderly recreation use.
- Objective 3—Enhance and maintain the natural character of the landscape on the west slope and lands adjacent to recreation roads and trails on the east slope.
- Objective 4—Eliminate adverse physical and biological impacts of OHVs on vegetation, soil, wildlife, and cultural resources.
- Objective 5—Minimize conflicts among non-OHV recreationists and OHV users.

Previous vehicle management decisions were published in a 1979 *Federal Register* Notice (non-motorized use only from Mattole Beach to Lighthouse); and additional vehicle management decisions include the 1990 California Statewide Wilderness Study Report (closure of coastal slope portion of the Smith-Etter Road) and the 1998 Black Sands Beach Plan Amendment (closure of 3.5 mile beach open riding area).

County roads within the KRNCA are public routes and are managed by Humboldt County, except for a short stretch of Chemise Mountain Road at the southern tip of the NCA which is under Mendocino County jurisdiction.

2.14.3 Existing Conditions—Transportation System

Figure 2-17 identifies the County and BLM managed roads that provide access to and within the KRNCA. The primary access route for visitors to the King Range from the south is via Garberville/Redway exit off U.S. 101, following the Briceland-Thorn Road and Shelter Cove Road to the coast. The KRNCA Office is seventeen miles west of Redway along this paved two-lane route, and the town of Shelter Cove is nine miles farther. The primary northern access route is from Ferndale via the Mattole or Wildcat Road, reaching the Mattole Campground 35 miles south of Ferndale. A third corridor accesses the central part of the KRNCA from the Eel River Valley at the South-Fork/Honeydew exit of U.S. 101. Known as Bull Creek or Panther Gap Road, this route winds for 26 miles through redwood forests and open ridgetops to the Honeydew Creek Campground. All of these access corridors traverse dramatic mountain landscapes and are highlighted as scenic driving destinations in travel guides for the region.

From where Mattole Road intersects with Bull Creek Road at Honeydew, Wilder Ridge Road runs south near the eastern edge of the King Range to link up with Shelter Cove Road about three miles east of the KRNCA administrative office. This road is the main north-south link between area trailheads and recreation sites. Although the route is mostly paved, it has numerous one lane stretches and a steep

winding descent into Honeydew that limits north-south access by visitors with trailers or larger recreation vehicles. The King Peak Road parallels Wilder Ridge Road to the west, and traverses the KRNCA. This route is unpaved and mostly one lane, and provides access to several camping areas, trailheads, and BLM roads. North of the Horse Mountain Campground, this route becomes extremely narrow, steep and winding, and is inaccessible to even small trailers or recreational vehicles. Chemise Mountain Road traverses the Bear Creek Valley south from Shelter Cove Road and provides access to Wailaki and Nadelos Campgrounds. A number of County roads in Shelter Cove also serve as access routes to BLM recreation sites within the subdivision.



Humboldt County roads serve as scenic access corridors to the KRNCA.

The *Regional Transportation Plan for Humboldt County* is the primary strategic planning document for the area's County roads. This plan also identifies priorities for funding of roadway improvements with federal and state highway funds. Table 2-20 lists the estimated traffic volumes and functional classifications of the primary County access roads to and within the KRNCA. The plan recognizes the importance of the tourism industry to the County economy and the use of transportation routes as recreation travel corridors. It identifies needs for improving access corridors, providing adequate parking for recreational vehicles, and coordinated signing as priority needs for the County.

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Table 2-20: Estimated Traffic Volumes

ROAD NAME	ESTIMATED TRAFFIC VOLUME	FUNCTIONAL CLASSIFICATION
Mattole Road	900 Vehicles Per Day	Major Collector
Bull Creek/Panther Gap Road	800 Vehicles Per Day	Major Collector
Wilder Ridge Road	140 Vehicles Per Day	Major Collector
Shelter Cove Road	800 Vehicles Per Day	Major Collector
Chemise Mountain Road	Unknown	Major Collector
King Peak Road	Unknown	Minor Collector
Lighthouse Road	Unknown	Minor Collector

Source: Humboldt County Regional Transportation Plan, 2000-2002

The BLM maintains a 44-mile network of unpaved roads that links the County road system to KRNCA trailheads and other recreation sites and provide for fire and administrative access. Many of the routes also provide access to private lands, with Nooning Creek, Prosper Ridge, and Windy Point Roads serving as primary access for year-round residents. Below are listed the BLM roads in the KRNCA that are maintained for public access and their approximate mileage. No traffic volume data exists for these routes.

- Prosper Ridge Road, 2.2 miles
- Nooning Creek Road, 2.0 miles
- King Range Road, 6.6 miles
- Finley Ridge, 1.5 miles
- Smith-Etter Road, 10.2 miles
- Windy Point Road, 1.6 miles
- Telegraph Ridge Road, 3.2 miles
- Etter Road, 1.9 miles
- Paradise Ridge Road, 9.0 miles
- Saddle Mountain. Road, 5.4 miles

A variety of issues affect road use and maintenance on routes to and within the KRNCA. Some of the major issues are as follows:

- Erosive soils, steep topography and heavy precipitation events combine to make roads extremely susceptible to erosion and failure from landslides. Sedimentation from abandoned logging roads and improperly maintained roads impacts anadromous fish spawning success and other aspects of watershed health.
- Winter storms often make area roads temporarily impassible due to landslides, fallen trees, heavy snow in the higher elevations and muddy/soft surfaces.

- Visitors with large motorhomes and travel/boat trailers often have improper braking/towing capacity for the steep grades in the area. As a result, brake failures and vehicle fires from overheated brakes are safety issues.
- Slow moving vehicles cause numerous traffic slowdowns on area roads, where the steep terrain limits available pullouts.
- Parking capacity is often exceeded at popular sites during peak summer weekends, especially at Black Sands Beach in Shelter Cove.

A variety of actions have been taken to minimize impacts from the above issues, including improved visitor information, corrective road maintenance, and vigilant inspections/maintenance during winter storm events. Also, several BLM managed roads are limited to four-wheel drive vehicle use only, and/or are also closed in winter for visitor safety and to prevent road damage from wet weather travel.

2.14.4 Off-Highway Vehicles (OHVs)

A BLM-maintained 44-mile road network provides for OHV opportunities in the KRNCA. This road network ranges from two-wheel drive accessible routes to four-wheel drive “two-track” roads. Several of these routes serve as scenic driving corridors into some of the most remote reaches of the Lost Coast. They offer access to trails, scenic vistas, hunting opportunities, and undeveloped camping.

Motorized use of the King Range coastline by OHVs has been a controversial management issue since the KRNCA was established. In addition to OHV enthusiasts, other recreation users (particularly surfers and abalone divers) have used vehicles to reach more remote areas along the coastal corridor. In contrast, backcountry users, whose numbers have increased dramatically since the 1974 Management Program was written, feel their experience is diminished by the presence of vehicles on the coast (BLM 2003b).

Initially the 1974 Management Program allowed OHV use on a three-mile stretch of beach in the north section of the King Range, but use was discontinued in 1979, under authority from the California State Lands Commission, due to damage to archeological sites. In 1986, the KRNCA Transportation Plan allowed continued OHV use of the beach between Telegraph and Gitchell Creeks, citing popularity of the riding area and minimal resource impacts. However, it proved difficult to prevent vehicles from traveling north of Gitchell Creek onto the closed portion of the beach, and generally OHV use conflicted with primitive recreation and wilderness values (BLM 1997b). The 1986 Transportation Plan called for increased on-the-ground BLM presence to enforce the beach closure at Gitchell Creek, increased public information and signage, and monitoring to determine effectiveness of the plan, but these efforts met with minimal success. Nearly ten years later the BLM revisited the issue in the 1997 Environmental Assessment and Plan Amendment, which closed the remaining 3.5 mile stretch of Black Sands Beach to OHVs.

2.14.5 Current Management Practices

BLM maintains the 44-mile network of roads identified for public use in the KRNCA Transportation Plan. These roads are maintained on an as-needed basis through road grading and drainage work such as culvert maintenance or improvements. Grading and major improvements are completed through

contracts with the BLM performing other routine maintenance. The BLM also provides directional and other signs on these routes.

Maintenance and reconstruction of the road network to minimize erosion/sedimentation of area watersheds is an ongoing management priority. Current efforts are focused on outsloping and removing berms from the road network to improve road drainage and reduce the need for inboard ditches and culverts. Clogged culverts are a major source of road failures during heavy rains.

Several cooperative projects have been initiated to upgrade road surfaces and drainage structures on county roads in the KRNCA. Cooperative agreements established with the Humboldt County Department of Public Works and the BLM allow for joint projects on County roads within the KRNCA. Projects to date include the paving of 2.6 miles of Chemise Mountain Road (adjacent to the South Fork of Bear Creek, a prime salmon spawning stream) in 1996-97 (in cooperation with USFWS grant), and the replacement of culverts and other drainage structures on King Peak Road (1998). Humboldt and Mendocino County road departments regularly perform routine maintenance on all county roads in the planning area.

2.15 RECREATION RESOURCES

2.15.1 Introduction

The KRNCA is best known to outdoor enthusiasts as the location of the Lost Coast Trail, an oceanfront backpacking route that is regularly featured in magazines and travel guides. However, the area offers opportunities for a diverse array of activities including camping, hiking, equestrian use, hunting, fishing, surfing, mountain biking, wildlife watching, photography, and driving for pleasure, among others. The public lands in the King Range were accessed for dispersed recreation opportunities well before its designation as a National Conservation Area in 1970. However, the lack of facilities and public access limited use. The first recreation facilities were constructed in the 1960s and included the King Crest, Chemise Mountain and Lightning Trails, and the Wailaki, Nadelos, Horse Mountain, and Tolkan Campgrounds. Additional trails and facilities have been constructed as public demands have increased and changed. However, the area continues to retain its rustic character as a place for more adventurous outdoor enthusiasts.

This diversity of recreation resources leads to a wide array of often-overlapping uses. For example, at Mal Coombs Park in Shelter Cove, a wedding party may gather in the same parking area as several abalone fishermen preparing to dive, while tidepoolers and beachcombers get out of their cars and head for the shoreline. Backpackers walk to the Lost Coast trailhead at Black Sands Beach alongside elderly couples preparing for a quiet picnic. At Mattole Beach, local school children learn about the area's ecology or native cultures while vacationers from across the country set up their tents adjacent to the wild coastline. The area must be many things to many people, even while retaining its distinctive primitive character.

The King Range is a nationally-designated conservation area, but also a local resource for surrounding communities, particularly Shelter Cove and Petrolia where public lands provide community greenspace

for picnics, birthdays, weddings, and other social gatherings. Shelter Cove is also the main coastal access areas for residents of southern Humboldt County, including Briceland, Redway, and Garberville.

2.15.1.1 Regional Perspective

The King Range offers recreation opportunities unique to the region and the entire West Coast, particularly the coastal backcountry experience available on the Lost Coast Trail. For the purposes of this discussion, the recreation region can be defined as the general area along the coast from the Oregon border south to Mendocino, plus a wide inland arc reaching the Mendocino National Forest in the south and the Shasta-Trinity and Six Rivers National Forests in the north (see Figure 2-18). This area contains numerous state parks as well as national forests, parks, and recreation areas.

With the exception of adjoining Sinkyone Wilderness State Park and a small section of Prairie Creek Redwoods State Park, all of the region's coastal recreation opportunities at major recreation sites are oriented towards front country (developed, easily accessed) use, mainly beach access and camping, with no backcountry or primitive opportunities. There are several inland wilderness areas where backpacking is a common activity, such as the Yolla Bolly Middle Eel Wilderness and the Trinity Alps, but these offer much different settings and experiences. Other inland sites focus on more developed recreation; for example, the Ruth Lake area is geared towards lake-oriented recreation such as shoreline camping and watercraft use and Benbow Lake State Recreation Area is suited to non-motorized watercraft, swimming, and picnicking.

The King Range is unique as a place where visitors can take an extended, backcountry camping trip in a coastal setting. Combined with Sinkyone Wilderness State Park, the trail system on the Lost Coast is the largest coastal backcountry trail network in the nation. Although the U.S. has numerous sizable areas of mountain and desert ecosystems that offer backcountry recreation opportunities, primitive coastal settings are extremely limited. In addition to the King Range/Sinkyone coast, only a handful of areas are sizable enough to offer a coastal wilderness experience; the only comparable area on the west coast is Olympic National Park. Point Reyes National Seashore and Prairie Creek Redwoods State Park offer some backcountry opportunities, but on a smaller scale.

2.15.2 Applicable Regulatory Framework

BLM manages recreation in the KRNCA using the following regulations and policies.

2.15.2.1 Fire Permits

Campfire permits are required for anyone who builds or maintains a campfire that is outside developed campgrounds, as well as for the operation of all cooking stoves or other open flame. During high fire seasons, campfires may be temporarily suspended until the conditions change. Campfire permits may be obtained free of charge from any BLM, USFS, or CDF offices (BLM website 2003).

2.15.2.2 OHV Designations

See Section 2.14.



Pacific Ocean

PUBLIC LAND STATUS	
	BLM
	State
	US Forest Service
	Wilderness Areas
	Indian Lands

Regional Recreation Areas



10 0 10 20 Miles

EDAW
12/5/03

Scale 1 : 950,400
1" = 15 miles



Figure 2-18

2.15.2.3 Rehabilitation Act and Americans with Disabilities Act

BLM facilities are covered under Section 504 of the Rehabilitation Act of 1978 (Public Law 93-112), which requires that “programs and facilities be, to the highest degree feasible, readily accessible to and usable by all persons who have a disability, including mobility, visual, hearing, or mental impairments.”

2.15.2.4 Hunting and Fishing

BLM manages the KRNCA in a manner consistent with California Department of Fish and Game (CDFG) regulations for all applicable fish and game species found in the area. The King Range falls within the CDFG’s Zone B4, which sets the season dates for specific species. The deer rifle season (by far the most popular) begins the fourth Saturday in August and extends for 37 consecutive days. Squirrel season opens the second Saturday in September and ends the last Sunday in January. Bear season opens the same day as the deer rifle season and extends until the last Sunday in December or when 1,500 bear are taken statewide, whichever comes first. BLM also assists CDFG in the management of marine life such as abalone and tidepool organisms that are available for permitted collecting. Coastal waters off-shore from Mattole beach to the Punta Gorda Lighthouse were designated a Marine Resources Protection Act Ecological Reserve in 1994, and the entire coastline from Punta Gorda south to Point No Pass (39° 57’) was also designated an Area of Special Biological Significance by the California State Water Resources Control Board in 1974.

2.15.2.5 Special Recreation Permits

BLM policy (FLPMA and Title 43 CFR 8372 – Special Recreation Permits, Other than on Developed Recreation Sites) and the 1992 King Range Visitor Services Plan require that commercial and organized non-commercial groups obtain Special Recreation Permits prior to utilizing the KRNCA for their activities. All groups charging fees, including outfitters, must obtain a commercial use permit and meet associated fee and insurance requirements. Noncommercial use permits are required for non-commercial or educational groups using the backcountry for overnight use, but no fee is charged and insurance is not required. Non-organized groups, individual or family use does not require a Special Recreation permit. Groups are considered “non-organized” when no formal advertising of the trip occurs, no fees are charged, and the group is not affiliated with any established organization.

Special Recreation Permits are required for several reasons. Commercial recreation fees are collected to ensure a fair return to the public for private financial gain from use of public land. Backcountry group permits, both commercial and non-commercial, provide the opportunity to stress “leave no trace” backcountry ethics, and dispense other information. In addition, routing permitted groups to certain campsites during high use times can help spread use out and reduce social and environmental impacts on smaller more fragile sites.

2.15.2.6 Recreation Fees

In 1996 the BLM, U.S. Forest Service, National Park Service, and U.S. Fish and Wildlife Service were mandated by Congress to implement a Recreational Fee Demonstration Program. Under the program, all recreation fees are retained by the office collecting the fees. The Recreational Fee Demonstration Program will continue until September 30, 2005, at which time it may or may not be extended. Fees are

currently charged for commercial Special Recreation Use permits, bear-canister rentals for overnight backcountry travel, and campground use (BLM 2003b).

2.15.2.7 Bear Canisters

As use has increased on the coast, so have encounters with black bears, likely drawn to popular camping areas by improperly stored food and/or refuse. BLM implemented an emergency rule in 2002 to reduce conflicts between visitors and bears, requiring visitors to use a hard-sided bear-proof food storage container (manufactured specifically for this purpose) for storing food, trash, toiletries, and other scented items. To date this effort appears to be having a positive effect, as damage to backpacking equipment, food supplies, and reported encounters with bears have decreased since the rule went into effect.

2.15.2.8 Camping Stay Limit

The BLM limits camping stays to fourteen nights per year on all agency administered lands in northwest California.

2.15.2.9 Law Enforcement

BLM has one fully commissioned law enforcement ranger who patrols the King Range National Conservation Area. An additional three law enforcement rangers work out of the Arcata field office and occasionally patrol the King Range as well, particularly during holidays, busy weekends, or during “events” in the area. BLM also has a non-law enforcement Backcountry Ranger on staff that patrols the Backcountry on foot to provide public contact for visitors and to conduct resource monitoring in support of management objectives.

2.15.2.10 Resource Monitoring

A resource monitoring program was developed in 2002 to assess resource impacts from backcountry use along the Lost Coast. The monitoring program assesses all campsites and surrounding trails and auxiliary use areas during both early spring and mid-autumn. The reason for monitoring twice a year is to assess conditions after the winter storms have altered the beach environment, often removing campsites and driftwood shelters along the beach, and then to evaluate the change in conditions after the heavy use season in summer. Monitoring assesses impacts such as littering, fire ring proliferation, condition of driftwood shelters, sanitation problems, and vegetation and soil disturbance for all sites between Mattole and Black Sands Beach. Information from this monitoring program will be used in combination with visitor surveys and visitor use counts, reports from employees in the field and other information to determine the need for a more comprehensive visitor use allocation system in the future.

2.15.3 Existing Conditions

2.15.3.1 Recreation Sites and Opportunities

Recreation has long been a part of the King Range landscape, perhaps starting with early hunting lodges built in the 1920s and ‘30s (see Section 2.4.3.2, Historic Sites). As early as 1964, before the KRNCA was

formally established, there were already four developed campgrounds and three “hunter camps” (described below) on public-owned lands. Currently, BLM manages approximately eighty miles of trails, six developed campgrounds, four upland backcountry campsites, five coastal access areas, a Visitor Center, and other visitor and recreation features and destinations.

Hiking Trails and Trailheads

The King Range contains approximately eighty miles of hiking trails spanning from the coast to the tallest ridges and mountain peaks (see Figure 2-19). The majority of these trails were developed between 1964 and 1970, but since 1970 many have been expanded, developed, or even re-routed. There have been several recent trail installations since 1999, including Cooskie Spur Trail, Rattlesnake Ridge Trail, Horse Mountain Creek Trail, and the Chinquapin Trail. Two trails, the King Crest Trail and Lost Coast Trail, have been designated as National Recreation Trails. This designation identifies these routes as being in the “hall of fame” of U.S. trails.



The Lost Coast Trail is the most popular destination in the KRNCA.

Established trailheads include the following: Black Sands Beach, Mattole Beach, Northslide Peak, Kinsey Ridge, Spanish Ridge, Lightning, Saddle Mountain, Horse Mountain Creek, Hidden Valley, Nadelos and Wailaki Campgrounds, and Windy Point. Major trails in the King Range include:

- **Buck Creek Trail:** This 3+ mile long trail drops nearly 3,300 vertical feet from the King Crest Trail (one mile from Saddle Mountain Trailhead) to the beach.
- **Kinsey Ridge Trail:** This old road, gated at the Kinsey Ridge trailhead along the Smith-Etter Road, drops 2,450 feet over four miles from the trailhead to the beach.
- **Spanish Ridge Trail:** This trail follows an unmaintained dirt road for about two miles from the Spanish Ridge Trailhead (end of Telegraph Ridge Road) before splitting off from the Cooskie Creek Trail and plunging down a decommissioned road 2,400 vertical feet over three miles to the ocean.

King Range National Conservation Area



- **Rattlesnake Ridge Trail:** This five mile long trail drops 3,500 vertical feet from the King Crest near the Miller Loop Trail to Big Flat.
- **Cooskie Creek Trail and Spur:** This 13 mile trail generally follows old ranch roads from the Spanish Ridge Trailhead to the beach between Fourmile Creek and the Punta Gorda Lighthouse. The Cooskie Creek Spur is a shortcut to the beach, dropping 750 vertical feet in 1.2 miles along an old ranch road.
- **Lost Coast Trail, north section:** This main portion of the Lost Coast Trail is the “heart” of the KRNCA. It extends 25 miles along the beach from Mattole Campground/Trailhead to the Black Sands Beach trailhead at the north end of Shelter Cove.
- **Lost Coast Trail, south section:** The BLM portion extends for a little over five miles from Hidden Valley Trailhead, rising 900 feet vertical elevation to Chemise Mountain before winding down into the Sinkyone Wilderness State Park.
- **Lightning Trail:** This 2 mile trail begins at the Lightning Trailhead at the end of the King Range Road and rises 1,800 vertical feet to King Peak, passing Maple Camp (with water) along the way.
- **Horse Mountain Creek Trail:** This connector trail from the beach to the ridge, drops 1,500 feet from the Horse Mountain Creek Trailhead along the King Peak Road to the beach in 3.8 miles.
- **Chemise Mountain Trail:** This connector trail is less than one mile long and links both Nadelos and Wailaki campgrounds with the southern Chemise Mountain portion of the Lost Coast Trail. It rises about 700 feet.
- **King Crest Trail:** This 11 mile trail traverses the King Crest, the “spine” of the King Range.

Additional, shorter trails in the King Range include the Chinquapin Trail, Miller Loop, Maple loop, and the nature trail between Nadelos and Wailaki campgrounds. Miller Loop and Maple Loop Trails connect Miller and Maple Camps (each near water sources) with the King Crest Trail. The Chinquapin Trail provides access to the Chinquapin Camp.

The Lost Coast Trail is particularly distinctive as one of the longest stretches of backcountry coastal trail remaining in the western United States. Only Olympic National Park in Washington has a similarly long stretch of backcountry coastline. The Lost Coast Trail follows approximately 56 miles of coastline; the King Range segment is 37 miles long, and the trail then continues south for another 19 miles through the Sinkyone Wilderness State Park.

Camping/Campgrounds

There are six developed campgrounds in the King Range, with a total of 54 sites, varying in terms of site layout, screening, proximity to residential areas and roads, and water availability (see Figure 2-18). They are listed here from north to south:

- **Mattole Campground:** Includes 14 tent/trailer campsites with picnic tables, fire rings, and vault toilets, and is the only beach campground in the King Range.

- **Honeydew Creek Campground:** 5 tent/trailer campsites in a riparian setting, with picnic tables, fire rings, and vault toilets. No potable water is available.
- **Horse Mountain Campground:** Offers 9 tent/trailer campsites with picnic tables, fire rings, and pit toilets. No water is available.
- **Tolkan Campground:** 5 trailer/4 tent campsites with picnic tables, fire rings, and vault toilets.
- **Nadelos Campground:** “walk-in” campground with 8 tent campsites, picnic tables, fire rings, potable water, and vault toilets. Entire campground may be reserved for overnight group use (up to 60 people).
- **Wailaki Campground:** 13 tent/trailer campsites with picnic tables, fire rings, potable water, and vault toilets.

In addition to the BLM-managed campgrounds, A. W. Way Park, operated by Humboldt County, offers camping and picnic sites along the Mattole River between Honeydew and Petrolia. Visitors wishing more amenities (hookups, showers) can camp in privately operated campgrounds in Shelter Cove, Redway, Garberville or Ferndale.



The heavily forested Wailaki Campground is one of the most popular in the KRNCA.

Additionally there are four primitive backcountry camps in the King Range, some that have been established and used for many years, stemming from early “hunter camps.” Maple Camp, Bear Hollow Camp, and Miller Camp are located on upland trails near King Peak, with water (although it must be filtered or purified) available from streams or developed springs that flow all or most of the year. Chinquapin Camp is the only established backcountry campsite on Chemise Mountain and is near a perennial stream. All of these backcountry campsites are small, shaded woodland sites, and historically have received light, sporadic use. However, with increasing visitation and organized groups being re-

routed to alternative trailheads (other than Black Sands Beach and Mattole), use of these campsites is increasing.

Day Use Areas

The BLM maintains three day-use areas in the community of Shelter Cove. Mal Coombs Park lies in the heart of Shelter Cove, and includes the newly relocated Cape Mendocino Lighthouse (see description below). A stairwell perched on the rocky cliffs of Mal Coombs Park allows access to frequently visited tidepools and sea lion resting areas. BLM maintains a restroom, an information kiosk, interpretive panels, and a picnic area with barbeque facilities at Mal Coombs Park. In addition, Seal Rock and Abalone Point day-use areas have pull-outs off Lower Pacific Drive that offer sightseers a place to picnic with unobstructed views of the ocean. Other than picnic tables and interpretive panels, Seal Rock and Abalone Point day-use areas are undeveloped. Mal Coombs Park has become a popular location for special events such as weddings, memorials, non-profit fundraisers, etc., that require a permit. The BLM processes each request through the Special Recreation Permit process.

Black Sands Beach, known for its distinctive geological composition of greywacke stone, is located just to the north of Shelter Cove, and is a popular day-use area among both visitors and local residents. To keep up with visitor demand, a recently constructed parking lot with restrooms, kiosk, overlooks with interpretive displays, and drinking water resides on a bluff overlooking Black Sands Beach. An emergency telephone with 911 access is located at a smaller universal access parking lot closer to the beach. Black Sands Beach is the most heavily used trailhead to access the King Range portion of the Lost Coast Trail. This causes crowding problems on popular summer weekends when the parking area is filled beyond capacity.

The mouth of the Mattole River is also heavily used for easy beach access by visitors and local residents. The Mattole Beach trailhead is the northern terminus of the Lost Coast Trail and the primary access route for day hikes to Punta Gorda Lighthouse.

King Range Office/Visitor Center

The King Range Visitor Center, located on Shelter Cove Road near Whitethorn Junction, was completed in 1999 and serves as the key resource for KRNCA public information and regional land stewardship meetings. Visitors can ask BLM staff questions about recreation facilities and uses, pick up maps and tide charts, obtain fire permits, rent bear canisters, and enjoy a variety of photographic, educational, and interpretive displays. The facility also serves as the administrative office for the King Range staff.

Lighthouses

The historic Punta Gorda Lighthouse is located about three miles south of the Mattole Campground/Trailhead on the Lost Coast Trail. Historically, high winds and dangerous shoals caused many shipwrecks in this area, promoting the construction of the lighthouse in 1911. Light-keepers generally did not look forward to duty at isolated and lonely Punta Gorda, which earned the reputation of being the “Alcatraz” of lighthouses. No electric lines ever connected it to the outside world, and fierce winds and flooded streams kept it cut off from civilization for much of the winter. Punta Gorda was decommissioned in 1950. The site is a popular destination for day hikers.

The Cape Mendocino Lighthouse was carved into the Cape 400 feet above the surf in 1868. The conditions for the light-keepers here were brutal. Near constant gales and frequent earthquakes literally shook their homes apart. The Lighthouse was decommissioned in 1950. By 1999, when it was in danger of slipping from its original location into the ocean, the Cape Mendocino Lighthouse Preservation Society worked with the BLM and Humboldt County to restore and relocate it to Mal Coombs Park in Shelter Cove. The original lens from the lighthouse is displayed at the county fairgrounds in nearby Ferndale. Today, Society volunteers open the Lighthouse and provide information to visitors during heavy use periods. Interpretive displays both outside and inside the facility tell the story of this interesting and historic lighthouse.

2.15.3.2 Recreation Activities

Sightseeing

Many people visit the KRNCA area as part of or major destination point for sightseeing trips. Shelter Cove is a frequent destination for people wanting to fish, gain spectacular ocean views, picnic by the sea, or drive for pleasure and enjoy the surrounding scenery, to name a few reasons. Those wishing to see more of the King Range while sightseeing can also drive roads such as the King Peak, King Range, Saddle Mountain, Smith Etter and Telegraph Ridge Roads. People also visit the King Range specifically to simply watch the waves, particularly in the winter when the surf is especially large and spectacular after storms.

Wildlife Viewing and Photography

The King Range has a diversity of wildlife, both terrestrial and marine. Points within the King Range are often used for observing and photographing whales as they migrate past the area during late fall and early spring. Seals and sea lions can easily be seen at a number of locations, particularly from Shelter Cove sites, the Punta Gorda Lighthouse area, and Sea Lion Gulch. Exploring intertidal life is a popular activity, particularly below Mal Coombs Park at Shelter Cove, and the Punta Gorda Lighthouse area. Elk viewing in the Hidden Valley area is also very popular.

Backpacking and Hiking

The primary recreational attraction to the KRNCA is the backpacking, hiking, and camping opportunities in the backcountry, particularly along the Lost Coast Trail. The classic “through” hike is the 25 mile stretch between Mattole Beach to Black Sands Beach, usually done north to south in the summer due to the prevailing, often strong, north winds. Approximately two thirds of the Lost Coast trek involves hiking directly on the beach, on sand, gravel, and cobbles, which can slow the pace of even the strongest hiker. The remaining third of the trail, mainly in the Big Flat and Spanish Flat areas, traverse uplifted benches above the ocean and provide much easier walking. Creeks and springs are plentiful along the coast but all water must be filtered. During the rainy season (generally November through April), winter storms can cause major obstacles to backpackers. Heavy rains swell the major creeks, making them impassable while large waves make the beaches dangerous. Two major areas along the coast (from just south of Buck Creek to Miller Flat, and between Sea Lion Gulch and Randall Creek) can be difficult to pass at higher tides and extremely dangerous during times of rough seas with large

swells. Other natural hazards include poison oak, ticks, and rattlesnakes are found close to the beach as well as along the upland trails.

Despite the sometimes adverse conditions, the Lost Coast provides the backcountry traveler a myriad of wondrous sights and sounds. Tidepools, archaeological and historic sites, diverse and abundant wildlife, wildflowers, and the ever present ocean produce unique experiences for visitors. While the King Range NCA receives visitors from throughout the country and world, the majority of backcountry users come from the greater San Francisco Bay area (Martin and Widner 1997). Many hear about it from word of mouth or travel articles. Others read articles from magazines such as Outside, National Geographic, Backpacker, Sunset, and others which frequently write about the Lost Coast.

Backcountry campers may camp anywhere within the King Range. Numerous campsites have become established through frequent use along the coast, particularly at the mouths of the major creeks. Along the upland trails, most people camp at the established backcountry campsites (Maple Camp, Miller Camp, Bear Hollow, and Chinquapin Camp) as these locations essentially provide the only sources of drinking water. While the majority of backcountry overnight users are drawn to the Lost Coast, an increasing number of people are backpacking the sixty miles of upland trails. Completion of the Rattlesnake Ridge Trail greatly expanded the loop trail opportunities combining upland trail and beach backpacking. The Buck Creek-King Crest-Rattlesnake Ridge-Lost Coast Trail loop trip is becoming more popular while fewer people connect the upland trails with the beach via other connector trails such as the Kinsey Ridge trail. These upland/beach loop trail opportunities give people more diversity in their backpacking outing but require extensive elevation gains and losses and demand that the hiker be in excellent physical condition.

Equestrian Use

Horseback riding as a recreation activity in the King Range has a relatively long history, predominantly with local equestrian enthusiasts. Present equestrian use is light, with most activity focused along the Lost Coast Trail. It is not uncommon for llama and goat packers to use the area as well as the more traditional horse and mule packers. BLM has worked to address equestrian demand including recently developing the Horse Mountain Creek Trail and staging area, with help from equestrian organizations. Horse use is partly limited due to difficulty in accessing trailheads on narrow mountain roads with large trailers. Many trails also have narrow stretches that are difficult for pack stock to negotiate. Opportunities exist to improve equestrian access on a portion of the trails.

Mountain Biking

When the 1974 Management Program was developed, mountain bicycles had not yet been invented, but in the past ten to fifteen years their use has sky-rocketed nationwide. To date the King Range has received relatively little use, due to a relatively low number of suitable roads and trails. Large portions of the King Range are managed as Wilderness Study Areas (WSAs) and thus may become off-limits to bicycles if they are eventually designated wilderness under the 1964 Wilderness Act. In addition, according to BLM policy, new trails constructed within existing WSAs are also off limits to mountain bikes so as not to develop a pattern of use, only to be prohibited in the future if the area is formally designated. Opportunities exist to develop mountain bike trails in non-WSA parts of the area.

Hunting

Several types of animals, including deer and squirrels, are hunted in the King Range, especially the northern part of the area. Similar to national trends, the number of licensed hunters has decreased in California (based on license sale data from 1996 to 2002). However, not all types of hunting permits have decreased in sales; non-resident deer tags, duck stamps, and two-day waterfowl permits have all increased (CDFG 2002). Informal field observations indicate that hunting trends in the King Range are decreasing as well. However, the area continues to be popular among hunters, especially since it is the largest block of public land available for hunting in the region. Opening day of deer rifle season in the King Range brings in a moderate influx of hunters into a comparatively small region, resulting in some user conflicts. Most conflicts arise between hunters and private landowners bordering the KRNCA. The landowners cite trespass and safety as major concerns. The BLM has worked to minimize these conflicts by increasing hunter information and providing additional field staff and ranger patrols in popular hunting areas.

Surfing

The wave breaks off the King Range, particularly in the area around Big Flat (8.5 mi. north of Black Sands Beach), are well known for excellent surfing conditions. The best conditions occur from fall until spring when winter storms build large ocean swells. Many surfers hike the 8.5 miles from Black Sands Beach to Big Flat. However, in recent years, increasing numbers of drive-in boaters make trips from Shelter Cove to access backcountry surf destinations, particularly Big Flat. Many of these boats are used for day trips and are anchored off shore while their owners surf. However, increasing numbers of surfers are landing boats and bringing in supplies for camping. This trend has raised the question about the appropriateness of using motorized watercraft in an otherwise non-motorized backcountry setting. A trend of increased littering may be a result as some visitors that arrive by boat are unwilling or unable to pack out the larger amount of supplies brought in during the winter surf season.

Fishing

The community of Shelter Cove is a major sport-fishing destination in California, featuring a public boat launch ramp, commercial chartering services, a parking area for car/trailer combinations, and a fish cleaning station. Anglers are drawn to the area for the summer ocean salmon season, but also fish for halibut, albacore and bottom fish. Some fishermen park at Mal Coombs Park which was designed for pull-through boat trailer parking. However, with the increased use of the park for other activities, the lot is often congested during peak summer weekends. The BLM has a design in place to expand parking, but funding has been unavailable for construction. Fresh water fishing is closed in the King Range except in to the lower Mattole River below Honeydew Creek which is open to catch and release steelhead fishing. The remaining streams are closed to fishing to protect threatened salmon and steelhead populations.

Other Uses of the Area

While most recreational activities in the King Range focus on hiking, backpacking, camping, wildlife viewing, surfing, hunting, fishing, and sightseeing in general, new interests and evolving technologies also bring less traditional uses to the area. Geocaching, a technology-based treasure hunt, is becoming more popular, with at least one geocache site established in the King Range. Mattole Beach is occasionally

used for paragliding. These and other activities receive very light use and tend to have little to no impact on the area.

2.15.3.3 Recreation Use Levels and Demand Analysis

Demand for specific recreation activities available in the King Range has, in most cases, increased significantly since the area was first established. Primitive camping, including backpacking, has rapidly increased in popularity over the past several decades. And, as mentioned above, there are several new types of recreation activities occurring in the King Range, including mountain biking, paragliding, and geocaching.

At a local level, BLM compiles visitor use information from observation sheets, trailhead registers, visitor feedback at the visitor center and direct contact in the field, bear canister rental information, Special Recreation Permit information, and will rely heavily on the 2003 Lost Coast Trail Backcountry Visitor Study. Preferences and use levels of visitors have been estimated, using the best available information and professional knowledge.

The 1997 Lost Coast Trail Backcountry Visitor Study (Martin and Widner 1998) was designed to gauge visitor demographics, likes and dislikes, and to establish trends in visitor satisfaction with the King Range, specifically the Lost Coast. A similar Visitor Study was conducted during the summer of 2003 (report not completed at the time of publication of this draft plan) and is planned for completion every five years to continue to identify trends in visitor satisfaction. Some key findings and conclusions from the 1997 survey are contained in Appendix G.

Use levels have grown steadily in the area over the past three decades. In 1973, there were an estimated 1,000 visitor days on the Lost Coast Trail and 65,000 total King Range visitor days. By 1986, use of the Lost Coast Trail had increased to 3,200 visitor days, and by 1996 use numbers were estimated at 14,000 visitor days. In 2001, the Lost Coast Trail had an estimated 17,000 visitor days and the entire King Range had 150,000 visitor days (BLM Recreation Management Information System Data 2002).

Because the majority of King Range visitors come from outside the immediate area, it is important to consider recreation demand trends at a larger scale. Nationally, demand for non-consumptive outdoor recreation is generally increasing compared to consumptive types (Cordell 1999). This would include an increase in participation of many of the types of outdoor recreation available in the King Range such as hiking.

At the state level, a 1998 recreation study conducted by the California Department of Parks and Recreation (DPR) provides the most recent regional demand data for 43 recreation activities, including several activities that occur in the King Range (DPR 1998). Participants in the DPR study were asked to rank activities they would increasingly pursue if good opportunities were available, and the activities were then categorized according to level of demand; the results are listed in Table 2-21.

Table 2-21: Demand for Selected Recreation Activities in California

ACTIVITY	EXISTING DEMAND
Trail hiking	High
Mountain biking (unpaved surfaces)	Low
Driving for pleasure	Low
Primitive camping	High
Developed camping	High
Nature study/wildlife viewing	High
General use of open space	High
Picnicking	High
Beach activities	High
Fishing (freshwater)	High
Hunting	Low

Source: DPR 1998

2.15.4 Recreation Management Issues

2.15.4.1 Use Capacity at King Range Facilities

Black Sands Beach, Mal Coombs Park, and Mattole Beach are popular destinations for both local residents and visitors. Heavy use occurs at these easily accessible beach locations on summer weekends, and especially on Memorial Day, Fourth of July, and Labor Day weekends. At these times, facilities such as parking lots serving these sites reach or exceed their physical design capacity. Future use projections indicate a need to consider either limiting use or expanding capacity at these locations. Currently, campgrounds are rarely filled, except at Mattole, which can reach capacity during summer weekends.

2.15.4.2 Use Levels of Lost Coast Trail and Big Flat

As discussed above, use along the Lost Coast Trail has been steadily increasing, reaching approximately 17,000 visitor days of use in 2002. In the Lost Coast Trail Backcountry Visitor Study, researchers found that camping was fairly well spread between ten locations along the coast; Big Flat received the most use of any campsite location along the coast, totaling 22 percent of all campsite use, followed by Gitchell Creek (14 percent) and Cooskie Creek (11 percent). At that time, 28 percent of users felt that controls were needed to limit the number of users on the Lost Coast Trail, and 47 percent of respondents believed that controls were not needed now, but that they should be imposed in the future if overuse occurs. The preferred method of controlling use was by achieving better spacing between groups rather than limiting access to the area. Visitors clearly did not want use to be controlled by the use of a lottery permit system, with over 60 percent of all visitors opposing this method. Over 60 percent of all visitors would support a first-come first-served or a mail reservation system for the delivery of a use permit system (Martin and Widner 1998).

The increasing intensity of recreational use on the King Range coast creates several management challenges, particularly between Big Flat and Shelter Cove. Big Flat has always experienced heavy use due

to its location and unique setting. Big Flat features a major trail junction leading to and from King Peak, the distance from Shelter Cove makes it a desirable overnight campsite, fresh water is available, it is a renowned surfing location, and there is ample space for visitors to find campsites away from others. Although Big Flat receives heavier use than any other campsite on the Lost Coast, it can accommodate larger numbers of people. Over one hundred people were counted camping on Big Flat in one night during 2003 Memorial Day weekend. Greater impacts (overcrowding, sanitation issues, etc.) occur at Buck Creek and Shipman Creek, both very popular but much smaller sites. Many people backpacking from Mattole to Black Sands Beach or other routes prefer to camp at these locations to position themselves for a shorter hike out to Black Sands Beach or to avoid the high tide. Others start from Black Sands Beach camp at Gitchell Creek, Buck Creek, or Shipman Creek, and take day hikes up to Big Flat.

One particular use trend at Big Flat is the use of boats to access the area for one-day surfing trips, or to unload equipment and supplies for surfers or other groups of visitors wishing to camp at Big Flat for longer periods of time. Consequently, this new form of access allows people to bring more heavy equipment and gear than backpacking generally allows, and this has led to an increase in trash at the site. In the 1997 Lost Coast Trail Backcountry Visitor Study, respondents rated few potential management problems as “major” or “moderate,” but litter was identified as a problem by 30 percent of all users (Martin and Widner 1998). In recent years, the BLM has removed between 500 and 1,000 pounds of trash annually from Big Flat including tarps, pots and pans, extra food, and miscellaneous garbage. However, BLM has no direct management authority over off-shore resources; mechanized boat use along the shore is legal, although the actual “landing” of watercraft on the beach, which is where BLM’s jurisdiction begins, is not consistent with current management goals. It has also been observed that boat-in users occasionally have had trouble returning to their watercraft with their belongings, particularly if the weather is bad, and this may significantly contribute to the trash problem, as boaters are forced to hike out and cannot carry everything with them.

2.15.4.3 Sanitation

Sanitation, particularly in regard to human waste, is a growing problem at popular camping sites on the Lost Coast Trail, not only at Big Flat but also near the mouths of major creeks such as Buck Creek, Shipman Creek, and Cooskie Creek. Human waste directly adjacent to creeks and within or close to campsites is both an ecological and human health issue. Educational materials encourage coastal backcountry hikers to bury human waste on the beach in the wet sand below the high tide mark.

2.15.4.4 Campfires in Summer

As discussed in Section 2.15.2 (Applicable Regulatory Framework), fires are permitted in the King Range during much of the year, although campfire permits are required at all times for campfires and camping stoves. During declared fire season (usually starting July 1), campfires are prohibited, until rainstorms return to the Lost Coast, generally in early fall. Fires have been known to spread from campsites along the Lost Coast Trail to the west slope from poorly located or excessively large campfires. In particular, driftwood logs or open grasslands can be ignited if visitors build fires too close to them and wind can then spread the flames. Over the last few years, BLM has been improving education for visitors about the proper use of campfires. This includes building fires a safe distance from driftwood piles, selecting properly sized sticks and fuels to burn, and completely extinguishing fires with water instead of sand.

2.15.4.5 Conflicts/Crowding Among Recreational Users

Based on current management, there have been relatively few recent reports in the KRNCA of conflicts between user groups. In the 1997 Lost Coast Trail Backcountry Visitor Study, conflict between users was measured using an index of three questions: crowding, behavior of others, and resource impacts. Survey respondents felt that hiker groups, which were the most frequently encountered, were not a problem. In fact, only 12 percent of respondents indicated that they saw too many hikers. However, 27 percent said that the behavior of others interfered with their enjoyment of the Lost Coast Trail (Martin and Widner 1998). Most of this concern was attributed by respondents to vehicle use on the beach, which is no longer permitted.

Field observations indicate some conflicts may be attributable to group size on the Lost Coast Trail. The presence of large groups, although they make up a relatively small percentage of overall use, results in the over-crowding of isolated small camping spots like Buck Creek and Shipman Creek. In addition, larger groups have a higher impact on the level of solitude visitors feel when traveling the Lost Coast Trail. The 1997 Lost Coast Trail study found that the average group size on the trail was 3.1 people (Martin and Widner 1998). Preliminary data from a similar study completed in 2003 indicated that the majority of users preferred a maximum group size of 10 or fewer people (Martin 2003). As a result of the above concerns, limits have been set for Special Recreation Permittees, which usually represent the largest groups on the Lost Coast Trail. Current limits include group size, number of groups allowed from each trailhead, and limiting number of groups camping at smaller and/or more sensitive campsites.

2.16 INTERPRETATION AND EDUCATION

2.16.1 Introduction

The KRNCA's interpretive and educational program emphasizes the rugged isolation of the King Range and how dynamic physical processes influence its natural and cultural resource values, and explains the role of the BLM in maintaining those values while providing a diversity of recreation opportunities for the public (1992 Interpretive Prospectus). Interpretive materials are aimed at helping visitors appreciate the uniqueness of the King Range while learning to use the area in a safe and responsible manner. This may include preparing visitors for exploring the backcountry, such as conveying information about the highly variable weather, tides, and trail conditions, as well as suggesting strategies for better safety and preparedness on the trail. However, not all visitors have the time or the ability to experience the backcountry directly, and so for them, interpretive materials convey an understanding and appreciation of the primitive qualities of the area while remaining on the more developed margins.

2.16.2 Existing Facilities and Programs

As described in the Recreation section above, most developed sites and facilities in the King Range have associated interpretive materials, including extensive exhibits at the King Range Office. A fold-out glossy map is available for all visitors, which includes both basic geographic information plus brief descriptions of area resources, recreation opportunities, regulations for use, and safety suggestions. BLM also maintains kiosks at trailheads and other developed sites throughout the King Range with basic maps, area conditions, and natural history information. The information is updated seasonally, and is intended as an

additional effort to communicate the basics of safety and preparedness to visitors, as well as to further encourage the “leave no trace” ethic.

Most developed recreation sites in the KRNCA feature interpretive panels intended as destinations for people interested in learning about on-site features, rather than emphasizing safety or general orientation to the area. These include two panels about archeological resources at Mattole Beach, panels at both the Punta Gorda and Cape Mendocino lighthouses on their particular histories, and a number of panels throughout Shelter Cove describing the area’s history, marine mammals, and tidepools. There is also an interpretive trail between Nadelos and Wailaki campgrounds offering background on Native American stewardship and use of natural resources. In 2003, BLM developed interpretive panels for Black Sands Beach to educate day-use visitors about the KRNCA’s natural processes and help prepare backpackers for hiking the Lost Coast Trail.

A number of King Range interpretive programs are designed specifically to involve local school children, to educate them about their surrounding ecosystems and create a stronger relationship with the KRNCA as well. An example was the Petrolia School coastal prairie education effort, where local kids first learned about these unique habitats, and then developed interpretive signs to educate visitors about staying on the roads and protecting the prairies. Local classes have also adopted the Mattole Beach and have produced signs advocating a leave-no-trace ethic and respect for natural resources. Other school groups have adopted watersheds and participate in tree planting, stream turbidity monitoring, and a variety of other hands on resource management projects.

BLM staff, sometimes with interns or volunteers (see below), also conduct guided interpretive walks in the King Range, covering a wide variety of natural and cultural history subjects. Walks are offered routinely during the more popular summer months, then scaled back to on-demand tours during the rest of the year. Staff will also set up topical presentations for special groups, such as the American Hiking Society or a local basketweavers’ group.

2.16.3 Local Collaboration and Partnerships

Significant education and interpretation is done in partnership with local organizations. For example, BLM works with the Lost Coast Interpretive Association (LCIA), a non-profit group whose purpose is to “provide education about and advocacy for the natural environment and cultural history of the Southern Humboldt and Northern Mendocino Coast, and the Mattole River Valley, for residents and visitors to the area” (LCIA Articles of Incorporation). In 2001 the BLM and LCIA jointly produced the “Lost Coast Adventure” video to educate visitors on planning a safe, low-impact backpacking trip along the coast. Other joint projects include local nature fairs and periodic theme-based educational programs for visitors and residents. Similarly, the non-profit Mattole Restoration Council works in partnership with the BLM to educate K-6 school children about watershed health and fisheries management.

In another collaborative effort, in 1999 BLM worked with the Cape Mendocino Lighthouse Preservation Society to relocate the lighthouse from its original location to Mal Coombs Park in Shelter Cove. The partnership project currently focuses on the development of interior and exterior interpretive and educational displays about the lighthouse’s history and relocation. Also, Society members guide interpretive tours during the summer months.

BLM also has a number of programs aimed at helping community students gain technical and career-oriented skills. For example, BLM assists South Fork High School in nearby Miranda, CA, with its wildland fire fighting program, through which students can receive certification as trained fire fighters. BLM has a formal relationship with Humboldt State University (HSU) in order to place students in King Range internship (and other) positions, which both assist BLM in its management of the King Range and the education and career development of HSU students.

2.17 PUBLIC SAFETY AND EMERGENCY SERVICES

2.17.1 Existing Conditions

Emergency services providers including local volunteer fire departments, the Humboldt County Sheriffs Department, U. S. Coast Guard, California Department of Forestry and Fire Protection and the BLM respond to hazardous conditions and distress calls in the KRNCA. The dynamic processes of the ocean, intense storms, and steep topography of the coastal mountain range create challenges for both visitors and emergency response teams trying to access remote locations in the KRNCA.

The KRNCA does not possess an inordinate number of risks and dangers for visitors when compared to other remote public land locations. However, due to its coastal location, several hazards exist that are not commonly encountered by backcountry visitors in other areas. Foremost among these are tides and large ocean swells, which can render parts of the coastline impassible. Other hazards, common to many backcountry areas, include steep trail segments with limited water supplies, loose sand and cobblestone footing, and swift stream-crossings. In addition, unpredictable natural hazards such as tsunamis, landslides, and earthquakes pose potential threats to King Range visitors, and so are management concerns for BLM and area emergency response organizations and agencies.

Each agency involved with emergency response maintains its own records; no formal interagency incident tracking system is in place. However, based on records compiled by the BLM, approximately eight to twelve search-and-rescue or emergency response incidents occur each year in the KRNCA (excluding fire and law enforcement actions). Most of these incidents take place along the coast and/or in the backcountry. In recent years, these incidents have covered a wide range of medical emergencies, including overexertion and dehydration, falls, drownings, hunting accidents and watercraft accidents.

The growing number of visitors each year is resulting in corresponding increased demands on emergency services providers. The nature of the area (unstable cliffs, large surf, etc.) also requires special skills, equipment, and training for emergency services personnel.

2.17.2 Current Management Practices

2.17.2.1 Emergency Agencies

The following agencies routinely assist the BLM in providing emergency services on public lands in the KRNCA:

- U.S. Coast Guard

- U.S. Forest Service (dispatch)
- California Department of Forestry and Fire Protection (fire protection and emergency response)
- Fortuna Emergency Command Center (interagency coordination)
- County of Humboldt Sheriff's Office
- County of Mendocino Sheriff's Office
- Shelter Cove, Honeydew and Petrolia Volunteer Fire Departments

Local volunteer fire departments play a vital role in emergency services and are often first on the scene at incidents. BLM has entered into Cooperative Assistance Agreements with the two departments, Shelter Cove and Petrolia, closest to the most popular access points to the KRNCA. As funding is available, the BLM assists these departments by providing equipment, training, and other resources. The closest hospitals are in Eureka and Garberville.

2.17.2.2 Emergency Responses

Search and rescue is a local county responsibility on public lands throughout the U.S., and the closest medical aid resources are dispatched to render medical assistance. In the KRNCA, 911 calls go to the Humboldt County Sheriff's Offices, who then call BLM, CDF, volunteer fire departments, and/or Coast Guard to assist with search operations and provide local knowledge of the area. Due to their proximity, local volunteer fire departments often arrive to the scene before other agencies. The BLM assists these local fire departments by providing funding for training and equipment.

Response to any particular emergency incident in the KRNCA varies on a case-by-case basis, depending on the type and location of incident, weather conditions (for example, low fog can prevent helicopter use), the agency or organization initially contacted, and personnel available to respond. In some cases, BLM learns of backcountry injuries and emergency extractions well after the incident, particularly if the Coast Guard is the first responder.

2.17.2.3 Emergency Communications

All BLM public information materials direct visitors to dial 911 in case of emergency. Pay phones are located in the communities surrounding the KRNCA. An emergency phone was installed at the Black Sands Beach Trailhead in 2000 to improve emergency response times and reduce assistance requests on the surrounding residents.

Each agency maintains their own communication system and is assigned specific frequencies by the FCC. Frequencies of CDF, Forest Service, Coast Guard, and local volunteer fire departments are programmed into BLM radios to allow for scanning and communication. In addition, BLM has a cooperative agreement with the Forest Service for dispatch and monitoring of BLM frequencies. BLM law enforcement rangers also have access to California Highway Patrol and County Sheriff radio communications. BLM maintains radio repeater sites on Cooskie Mountain, Toth Road (Shelter Cove), and Pratt Mountain (Garberville) to provide radio coverage for the KRNCA. However, due to the area's

topography, radio communication is limited, especially along the coast and interior valleys. Cell phones and satellite phones are used as backup communications.

2.17.2.4 Natural Disasters

The California Governor's Office of Emergency Services is responsible for assuring the state's readiness to respond to and recover from natural disasters, and for assisting local governments in their emergency preparedness, response, and recovery efforts. Under this program, disaster preparedness plans have been developed or are under development for Humboldt and Mendocino Counties to respond to a variety of natural disasters. Within Humboldt County, BLM has been assigned lead responsibility to warn public land visitors about an infrequent but very real threat: an earthquake-triggered tsunami. Due to the short warning timeframe for these events, there is no way to alert backcountry visitors to the approach of a tsunami, so efforts are focused on proactively educating visitors about proper responses (climbing to higher ground away from the coast if they have felt an earthquake) at trailhead kiosks.

2.17.2.5 Prevention–Safety Education Programs

A significant component of the KRNCA's safety program focuses on prevention, providing information and education to make backcountry visitors aware of possible hazards and proper preparation for area conditions. Although no data is available to measure the effectiveness of this program, the ratio of search and rescue incidents is relatively low when compared with the level of visitation. Area brochures and the KRNCA website inform visitors of potential hazards unique to the King Range and how to prepare for and/or avoid them. Kiosks at trailheads contain additional safety/current condition information, such as tide charts and trail closure/condition advisories. Registers are also located at each trailhead to assist search and rescue teams in locating visitors.

Observations have indicated that an inordinate number of search and rescue efforts have been required for clients of organized group permittees. To reverse this trend, additional orientation materials have been targeted to these visitors, and groups are now required to view an orientation and safety video.

2.18 SOLID AND HAZARDOUS WASTE MANAGEMENT

Solid and hazardous waste management practices in the King Range are regulated under both state and federal law. The state and federal laws and regulations that address waste management in the King Range are:

- Resource Conservation and Recovery Act (federal)
- California Health and Safety Code, Title 22

The BLM currently complies with all pertinent laws and regulations regarding solid and hazardous waste disposal. Non-hazardous solid waste is routinely collected from receptacles and facilities by BLM personnel or contractors and transported to a properly licensed and operated waste transfer station. The BLM does not burn waste or dispose of waste on-site. Occasionally, illegal dumping occurs on public land within the King Range. The waste is disposed properly by the BLM and, when feasible, the responsible party is identified and legal remedies are sought. Another source of potentially hazardous

waste is flotsam and jetsam that washes up along the KRNCA shoreline. Oil drums and other containers containing potentially hazardous materials occasionally wash onto the beach corridor. These items are removed and disposed of properly. No known landfills or other hazardous waste sites are known to occur on public lands in the KRNCA.

Currently, the volume of hazardous waste that is generated in the King Range does not exceed the small quantity generator threshold. The small volume of hazardous waste that is generated at the King Range Administrative Facility is either recycled or disposed through the Humboldt County Small Quantity Generator Program. The hazardous waste stream consists of used motor oil, expired or obsolete hazardous materials such as paint, solvents, batteries, and lubricants. Used motor oil is routinely collected by a properly licensed hauler and transported to a recycling facility. Personnel associated with the King Range have also been identifying less-toxic alternatives to hazardous materials that have been used traditionally.

Due to the remote nature of the King Range, only certain non-hazardous waste streams (paper, aluminum, and glass) can be economically recycled. Currently, most King Range public facilities are not equipped with receptacles for recyclable materials. As stated above, when possible, excess hazardous materials are recycled through the Humboldt County Small Quantity Generator Program which collects and provides excess paint and similar hazardous materials free to the public.

2.19 ADMINISTRATIVE SITE FACILITIES

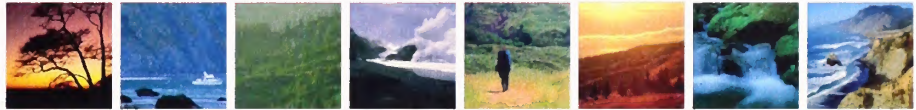
The King Range Administrative Site currently includes the King Range Project Office, a fire barracks, a workshop, an historic milk barn, an historic hay barn, and a “Butler” building. Except for the two barns and the Butler building, the facilities date from the mid-1990s and are currently in very good condition. The existing site plan for the Administrative Site was developed prior to construction of the fire barracks, shop building, and project office and includes a vehicle barn, which has yet to be constructed. Existing policy is to ensure that facilities are properly maintained by performing routine preventative maintenance and annual condition assessments.

Several facilities within the King Range are equipped with potable water supply systems. BLM policy regarding public water supplies is to operate and maintain the systems in accordance with applicable federal and state drinking water regulations. It is anticipated that the current program of upgrading public drinking water systems to meet state and federal requirements will continue. Specifically, public water supply systems are currently located at Nadelos, Wailaki, and Mattole Campgrounds. Although the water system at the King Range Administrative Facility is not considered to be a public water supply, Occupational Safety and Health Administration regulations require the system to be operated in accordance with the same requirements. In addition, several developed springs are located in the backcountry. These springs are interpreted to fall under the Safe Drinking Water Act and therefore must be monitored routinely.

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CHAPTER THREE : Alternatives



3.0 ALTERNATIVES

3.1 INTRODUCTION

This chapter describes four alternatives for management of the KRNCA planning area: the “no action” Alternative A and three action Alternatives B, C, and D. Alternatives are developed to establish a framework to evaluate the potential impacts on the planning area that might occur as a result of management decisions. The alternatives do not themselves constitute management decisions, but instead represent a reasonable range of approaches to managing land and activities consistent with law, regulation, and policy. Development of these management alternatives was guided by NEPA, FLPMA, the King Range Act (Appendix A), BLM resource management planning regulations, and input from the public through public and agency scoping. A final plan and Record of Decision (ROD) will be developed based on public input on this Draft and subsequent analysis. The final plan/ROD will contain the decisions (land use allocations and management prescriptions) that guide future management of the KRNCA.

In some cases, the alternatives include specific actions and action plans to be followed so as to make necessary changes in resource management within the planning area. However, not all issues can be resolved in the general language of a RMP and hence some will require that subsequent actions be taken to determine exactly how to reach desired conditions or to achieve a desired result.

The BLM has the discretion to select an alternative in its entirety or to combine elements of the various alternatives presented in this draft to develop the Final EIS and RMP. The reader may also select and/or combine elements of the various alternatives when providing comments on the plan. NEPA requires the development and testing of several alternatives, including a No Action Alternative, to analyze the potential impacts that a set of actions could have on the area. According to NEPA, BLM must consider these impacts in developing the RMP for the planning area, as described in Chapter 1.

This chapter starts with a discussion of how the alternatives were developed, briefly summarizes the approach for each, and identifies a preferred plan representing a combination of elements from different alternatives for each resource or resource use. It also proposes three geographic management zones, which consolidate and redefine the old zones from the 1974 King Range Management Program to better reflect the current conditions, allowable uses, and management goals for different parts of the KRNCA. They are intended to identify the types of activities that are most appropriate in each geographic area, as well as the level and types of environmental protection and enhancement measures desired.

The alternative goals, objectives, and management actions for each major resource area are then discussed in detail, in the same order they were covered in Chapter 2 (Affected Environment). The combination of input from guiding legislation/policies, public scoping and interagency discussions led to a framework of alternatives cover a relatively focused range of options.

Readers may note that the description of Recreation Alternatives (Section 3.15) provides significantly greater detail than the other sections. Since the KRNCA’s establishment in 1970, recreation use has seen the most change, and remains one of the most pressing issues facing management in this plan. The BLM planning team felt that this resource topic required a great deal of specificity to identify reasonable

gradations of recreation management, and as such, more site- and activity-specific information is provided for the alternatives and they pertain to recreation.

3.2 ALTERNATIVE DEVELOPMENT

The basic goal of developing alternatives was to explore the range of use options, protection options, and management tools that will achieve a balance between protection of the King Range's primitive character, overwhelmingly identified as a priority in the public scoping process (see Scoping Report), and a variety of resource uses and management issues. Alternatives must: meet the project purpose and need (see Chapter 1); be viable and reasonable; provide a mix of resource protection, management use, and development; be responsive to issues identified in scoping; and meet the established planning criteria (see Chapter 1), federal laws and regulations, and BLM planning policy.

The overarching vision for the future of the KRNCA is to maintain its unique opportunity to experience the California coastline in a relatively undeveloped and natural state. This vision serves to focus the continuum of management options. However, the alternatives identify different strategies for accomplishing that vision and meeting a variety of public needs. Alternative A is a continuation of current management as the "no action" alternative, and was developed from available inventory data, existing planning decisions and policies, and existing land use allocations and programs. Alternatives B, C and D were developed with input from public scoping and collaborative work among the BLM interdisciplinary planning team to represent a range of approaches to balance use and protection of the King Range's primitive character. The team initially identified large-scale themes and priorities for each alternative scenario, then broke into smaller interdisciplinary workgroups to articulate the specific objectives and actions for each resource program. The workgroups then came back together to fine-tune the alternatives and ensure compatibility of treatments for different resource types within each alternative.

Of the action alternatives, Alternative B represents the most "hands off" approach, emphasizing the utilization of natural processes wherever possible and minimizing human impacts. This will result in low levels of active involvement in resource restoration and management, and limited recreation use focused on providing maximum opportunities for solitude and wilderness-type experiences. In the middle of the spectrum, Alternative C provides a greater diversity of uses and approaches to management, with a broad mix of tools and moderate levels of use allowed. Alternative D takes a more active approach, allowing maximum use while still maintaining and enhancing resource conditions. It includes the widest application of management tools and actions, and provides higher levels of recreation use with fewer opportunities for solitude than the other alternatives.

3.2.1 The Preferred Alternative

The Preferred Alternative was selected from a range of reasonable options, and represents an effort to provide balance in managing both resources and uses of the King Range. Issues considered during this development process include: environmental impacts of the alternatives; issues raised throughout the planning process; specific environmental values, resources, and resource uses; conflict resolution; public input; and laws and regulations.

The Preferred Alternative, in summary, includes the following combination of approaches for each resource:

- Visual Resources Management: Alternative C
- Cultural and Historic Resources: Alternative D
- Lands and Realty: Alternative C
- Wilderness Characteristics: Alternative D
- Wild and Scenic Rivers: Alternative D
- Areas of Critical Environmental Concern: Alternative C
- Aquatic Ecosystems and Fisheries: Alternative C
- Wildlife Management: Alternative C
- Terrestrial/Vegetative Ecosystems: Alternative C
- Forest Management: Alternative D
- Special Forest Products: Alternative C
- Grazing Management: Alternative C
- Fire Management: Alternative C
- Transportation and Access: Alternative C
- Recreation: Alternative C
- Interpretation and Education: Alternative A

This combination focuses on the use of moderate, sometimes targeted management actions for most management programs in the King Range. It also would provide for moderate levels of recreation use, with some new management actions added to assure that neither resources nor recreation experiences are negatively impacted from overuse, while at the same time avoiding excessive restrictions. A few resource programs, such as Cultural/Historic Resources and Forest Management, would benefit from taking a more active approach. For Cultural/Historic Resources, this would result in greater knowledge about the resources within the King Range, as well as more specific protections for identified sites. Alternative D for Forest Management would provide a greater variety of applications that would contribute to “speeding up” ecological recovery of previously harvested lands. The KRNCA has an extensive and collaboration-based interpretation and education program already in place, which would be continued under Alternative A.

3.3 MANAGEMENT ZONES

Under Alternatives B, C, and D, some management decisions are organized by geographic zones. Three zones have been delineated, which represent a consolidation, revision, and simplification of the seven original zones in the 1974 King Range Management Program.

All three of the new zones allow multiple uses, but like the original zones, each emphasizes different primary resource values to be conserved and/or allowable uses available in various parts of the planning area. All public lands within the planning area are assigned to one of the three zones (see Figure 3-1): Backcountry, Frontcountry, or Residential. Under Alternative A, the planning area would be managed under the existing management zones prescribed by the 1974 King Range Management Program and subsequent existing revisions or amendments. (The original management zones are shown on the map in Figure 2-7.) Under Alternatives B, C, and D, the new zones would apply, as described below. All of the Backcountry Zone and a section of the northern part of the Frontcountry Zone (from Fourmile Creek north to the Mattole Campground) are within the King Range Wilderness Study Area; these areas will be managed under the BLM's Interim Management Policy for Lands Under Wilderness Review until Congress determines whether or not to designate the area as Wilderness. If Congress releases all or a portion of these lands from further Wilderness consideration, they will be managed under the objectives of the respective management zones.

3.3.1 Backcountry Zone

The Backcountry Zone includes the western coastal slope of the King Range plus the Honeydew Creek watershed, covering 37,319 acres. It is essentially roadless, with a primary management goal focused on recognizing and managing this unique and primitive undeveloped coastal area. This zone is the core of the KRNCA and Lost Coast, providing a primary use of a wildland recreation experience to visitors while protecting resources such as old growth forests, old-growth forest dependent wildlife, and open coastal grasslands. This environmental setting offers the greatest opportunity for both solitude and challenge, and self-sufficiency is crucial.

Management activities here need to follow the “minimal-tool” concept to maintain and restore the area to a natural functioning ecosystem. Under this approach, the BLM would achieve important resource management objectives with hand tools, except in emergency situations or where motorized equipment is determined through careful analysis to be the minimum necessary tool. Appropriate public use would include non-motorized activities with no facilities other than trails and a few primitive facilities (e.g., signs, sanitary facilities) for resource protection.

3.3.2 Frontcountry Zone

The Frontcountry Zone covers 28,931 acres and acts as the transition zone between the Backcountry Zone and surrounding private lands, and represents a broad mix of uses and tools for management. Most BLM roads and facilities are located in the southern and central parts of this zone, many functioning as “staging areas” to provide access for visitors into the backcountry. Primary uses include a more extensive array of public uses, including special forest products harvesting, fuelwood cutting, and camping in existing developed facilities. Also a primary management focus would include more intensive on-the-ground actions, such as timber stand improvement, fuels reduction work, fire break construction, or use of heavy equipment for watershed restoration. This is the zone where the most active resource management activities could occur.

King Range National Conservation Area



Despite the concentration of roads and facilities in this zone, many parts of the Frontcountry Zone are remote and contain minimal roads and facility developments. Examples are the areas near Cooskie Peak, Mill Creek, and Fourmile Creek in the northern part of the KRNCA. These lands were incorporated into this zone primarily because of their interface with surrounding private lands, and the need to allow for more intensive fuels management and resource restoration. No additional major public use facility developments (except trails) are proposed for these northern parts of the Frontcountry Zone under the plan.

3.3.3 Residential Zone

This 3,372-acre zone represents the town of Shelter Cove, which is mostly private land except for beachfront lots and parks managed by BLM. The KRNCA's most highly developed recreation sites are in this zone, and the primary uses and management goals focus on developed recreation and resource protection. The Residential Zone also represents a place to direct non-backcountry visitors, where they can learn about the primitive character of the Lost Coast and experience some of its values without the challenge of experiencing the Backcountry directly.

The remainder of this chapter presents the alternatives for each major resource management program in the King Range. Each section includes an introduction, a discussion of any goals, objectives, and management actions that are common across all the proposed alternatives, and then specific actions proposed for each distinct alternative.

3.4 VISUAL RESOURCE MANAGEMENT

3.4.1 Introduction

The visual quality of the rugged coastline along the King Range is one of the key reasons why many people love to visit the area, according to public scoping efforts. Protection of these scenic qualities also contributed to the designation of the area as a National Conservation Area. Zones within the KRNCA are categorized according to the national Visual Resource Management (VRM) classification system, used to ensure that any development or changes in the scenic landscape maintain or enhance the overall viewshed qualities. The alternatives classify the Backcountry Zone differently, but otherwise take a fairly consistent approach to management.

3.4.2 Common to All Alternatives

3.4.2.1 Goals

- To protect and enhance the scenic qualities and visual integrity of the characteristic landscapes of the KRNCA.

3.4.2.2 Objectives

- To enhance opportunities for visitors and residents to view the outstanding scenic landscapes characteristic of the Lost Coast.
- To conduct management activities and complete developments in a manner that is sensitive to the visual qualities of the area.

3.4.2.3 Management Actions

1. Complete visual contrast ratings for all proposed surface disturbing projects to ensure they meet VRM Class Objectives.
2. Complete visual contrast ratings for existing roads and facilities and identify opportunities to reduce existing visual impacts through modifications (e.g., painting culverts, removing road berms etc.).
3. Complete an inventory of existing and potential key scenic vista points along road and trail corridors within the KRNCA and identify opportunities to improve these locations as overlooks and interpretive sites so that they are available to the public.
4. Ensure that coastal developments do not detract from the scenic integrity of the area by working with Humboldt County, the California Coastal Commission and other agencies with management jurisdiction.
5. BLM managed lands in Shelter Cove provide the primary public open space in the Residential Zone. Any new site developments on public lands will be located and designed so that they do not detract from the coastal vistas. New facilities will be constructed away from the coastal bluff viewshed.

3.4.2.4 VRM Management Class Definitions

- **Class I:** The objective of this class is to preserve the existing character of the landscape. This class allows for natural ecological changes and only very limited types of management activities and uses. Any contrasts with the natural landscape must be minimal and not attract attention.
- **Class II:** The objective of this class is to retain the existing character of the landscape. The level of change to the characteristic landscape should be low. Management activities and uses can be seen, but should not attract the attention of the casual observer. Any changes must repeat the basic elements of form, line, color, and texture in the predominant natural features of the characteristic landscape.
- **Class III:** The objective of this class is to partially retain the existing character of the landscape. The level of change to the characteristic landscape can be moderate. Management activities and uses may attract attention, but should not dominate the view of the casual observer. Changes should repeat the basic elements of the predominant natural features of the landscape.
- **Class IV:** The objective of this class is to allow for management activities and uses requiring major modifications to the natural landscape. The level of change to the characteristic landscape can be high. Management activities and uses may dominate the view and be a major focus of

viewer attention. However, every attempt should be made to mitigate the impacts of activities through careful location and repeating the visual elements of the landscape.

3.4.3 Alternative A

The original KRNCA management program contained the following VRM Classes:

- Western Coastal Slope/Beaches: Class II
- Shelter Cove: No Class Identified
- Remainder of KRNCA (Uplands): Class III

3.4.4 Alternative B

- Backcountry Zone: Class I
- Frontcountry Zone: Class III
- Residential Zone: Class IV

3.4.5 Alternative C (Preferred)

Same as Alternative B, except portion of Backcountry Zone north of Cooskie Creek will be managed as VRM Class II.

3.4.6 Alternative D

- Backcountry Zone: Class II
- Frontcountry Zone: Class III
- Residential Zone: Class IV

3.5 CULTURAL AND HISTORIC RESOURCES

3.5.1 Introduction

While the natural scenery is often what people notice first about the King Range, the area contains substantial numbers of prehistoric sites and historic resources. Management efforts aim to reduce or eliminate deterioration and damage from other uses, as well as encourage understanding through education, outreach, and interpretive programs. All of the alternatives provide basic protections, with varying degrees of priority for the Frontcountry Zone and levels of no-action vs. proactive involvement in surveying, stabilizing, and nominating sites for national-level preservation status.

3.5.2 Common to All Alternatives

3.5.2.1 Goals

One of two desired goals for the King Range is to preserve, protect, and study the irreplaceable cultural resources and protect Native American burial grounds from disturbance or harm through outreach, educational (research oriented and informational), and interpretive efforts for the benefit of the public. (FLPMA Sec. 103(c), 201(a), 202(c); NHPA Sec. 110(a); ARPA Sec. 14(a)).

The second desired goal is to reduce imminent threats from natural or human-caused deterioration or potential conflict with other resource uses by identifying priority geographic areas for new field inventories based upon a probability for unrecorded significant resources. (ARPA Sec. 14(a); NHPA Sec. 106, 110).

3.5.2.2 Objectives

- Manage public lands within the King Range to preserve, protect, and study cultural resources which represent at least 3,000 years of human occupation and use along the coastal strand and more than 6,000 years for the interior.
- Develop and maintain good working relationships with appropriate tribal entities and Native American individuals; ensure that Native American burial grounds are protected from disturbance or harm; and re-establish traditional cultural practices through enhanced management of resources.
- Develop cooperative efforts with educational institutions, students, tribes, volunteers from the public, and interested private consultants for scientific studies, educational opportunities, and enhanced management of cultural resources in the King Range.
- Seek funding to conduct stabilization projects of important historic structures within the King Range such as the Punta Gorda Lighthouse and the historic Russell Chambers sheep ranching complex and develop maintenance schedules for their preservation.
- Integrate cultural resources management with other multiple uses within the King Range for the health of the land and other priority BLM initiatives for the benefit of the public.
- Prevent cultural properties from being disturbed or damaged through educational and interpretive outreach programs.
- Maintain the cultural resources monitoring program following BLM Manual 8100 Series guidance.
- Prepare nominations for the National Register of Historic Places for the KRNCA Archaeological District and the KRNCA Historic Ranching District.
- Build upon existing historic and prehistoric overviews of the King Range to include the larger regional perspective and interior areas.

3.5.2.3 Management Actions

- FLPMA/ARPA Cultural Use Permits and Field Authorizations may be issued to qualified persons or institutions for research and study of cultural resources located within the King Range.
- Educational and interpretive efforts, signs, tours, and outreach are encouraged where opportunities exist and no harm will come to the cultural resources within the King Range.
- Field evaluations and use allocations of all cultural resources located within the King Range will continue under the monitoring program.
- Safeguards against incompatible land and resource uses may be imposed through withdrawals, stipulations on leases and permits, design requirements, and similar measures which are developed and recommended by an appropriately staffed interdisciplinary team.

Archaeological inventories will be conducted for all previously unsurveyed lands within the King Range as projects are planned and ground disturbance work is proposed. All authorizations for land and resource use will comply with Section 106 of the National Historic Preservation Act, consistent with and subject to the objectives established in the Plan for the proactive use of cultural properties in the public interest (NHPA Sec. 106, 101(d)(6), 110(a)(2)(E); National BLM-ACHP-NCSHPO Programmatic Agreement of March 1997; California BLM-SHPO Protocol Agreement of 1998).

*Note: Per Washington, D.C. IB #2002-101, "All sections of the RMP that address the development of lands and resources will contain standard language stating that managers must not approve proposed activities until compliance with Section 106 of NHPA has been completed and documented, including, where applicable, consultation with the State Historic Preservation Officer and federally recognized Indian tribes." This applies to all pending RMPs, RMP revisions, and RMP amendments including Time Sensitive Plans.

3.5.3 Alternative A

Cultural resources would continue to be managed in the Backcountry and Residential Zones under the existing King Range Beach Cultural Resources Management Plan using the BLM Manual 8100 Series, existing laws, regulations, policy, and the monitoring program with no increase in monitoring or site patrols. Cultural resources in the Frontcountry Zone would continue under present management to be treated as less important and for purposes of compliance under existing law, regulation, and policy.

The BLM would continue to consult with Native American Tribes and individuals as needed in compliance with federal laws and regulations.

3.5.4 Alternative B

Same as Alternative A.

3.5.5 Alternative C

Cultural resources management would continue for all three zones using the BLM Manual 8100 Series, existing laws, regulations, policy, and the California BLM-SHPO Protocol Agreement of 1998.

There would be more emphasis on expanding the King Range Cultural Resources Management Plan to include the Frontcountry Zone.

There would be more collaboration with Native American Tribes and individuals.

Patrols and site monitoring would increase.

3.5.6 Alternative D (Preferred)

Cultural resources management would continue for all three zones using the BLM Manual 8100 Series, existing laws, regulations, policy, and the California BLM-SHPO Protocol Agreement of 1998.

A proactive approach would be implemented in the Frontcountry Zone whereby Class III archaeological reconnaissance of a certain acreage of unsurveyed lands are undertaken each year and a cultural management program is developed for the entire King Range.

A regional overview would be done for the entire King Range and surrounding areas.

Stabilization projects would be developed for important historic properties such as the Chambers complex and the Punta Gorda Lighthouse.

Emphasis would be placed on cooperative and volunteer outreach and greater collaboration with the Native American community.

National Register nominations would be developed for King Range Historic and Prehistoric Archaeological Districts.

Patrols and site monitoring would increase.

3.6 LANDS AND REALTY

3.6.1 Introduction

The BLM supported a vigorous land acquisition program in the 1970s and '80s, and most of the lands within the boundary of the KRNCA are now under public ownership. Past acquisitions have consolidated and enhanced management of the KRNCA. Acquisition is still a valuable tool for facilitating efficient and beneficial management of the area. Acquisitions are conducted on a willing-seller basis, and can be achieved through donation, purchase, exchange, or other less-than fee title transactions. The alternatives propose a method for prioritizing land and interest in land acquisitions; different

acquisition approaches for the three management zones; and a range of considerations for rights-of-way applications and permits. This section also includes water rights and rights-of-way.

3.6.2 Common to All Alternatives

3.6.2.1 Goals and Objectives

Land Acquisition

The BLM will:

Work with willing sellers to acquire lands and interests in lands within the boundary of the KRNCA under the authority of the King Range Act to:

- meet the objectives and resource conditions of the management zones and designated use identified in the RMP
- continue to consolidate lands to provide for more efficient management

Work with willing sellers to acquire lands and interests in lands adjacent/outside the boundary of the KRNCA under the authority of FLPMA to:

- meet the objectives and resource conditions of the management zone adjacent to the acquisition lands
- support and complement project areas within the King Range vicinity pursuant to the Arcata Resource Area Management Plan, the Northwest Forest Plan, other federal plans that may be approved during the tenure of the RMP, or community-based conservation initiatives
- provide habitat continuity for threatened, endangered, and other special status species
- provide watershed protection for the Mattole River and tributaries

Manage lands contiguous to the KRNCA consistent with the management goals and objectives of the adjoining zone. Manage lands acquired in the future within and adjoining the KRNCA consistent with the goals and objectives of that zone.

Apply for water rights associated with new acquisitions, as appropriate.

Provide access to public lands within the boundary, Backcountry, and Frontcountry zones. Adjacent to or outside the boundary, provide for, or improve public access to and adjacent to public land. BLM would work with willing private landowners to acquire easements or lands that resolve administrative or public access issues.

Work with willing sellers to acquire lands and interests in lands within the Residential Zone to:

- enhance visitor services and complement recreation opportunities
- resolve visitor capacity issues of public use on Shelter Cove residential properties
- facilitate protection of greenbelts, riparian values and water sources

Rights-of-Way

Issue rights-of-way and permits on, over, or across public lands within the boundary or adjacent to the KRNCA under the authority of FLPMA. Applications for rights-of-way and permits will be considered on a case-by-case basis pursuant to the Code of Federal Regulations 2800/2900, and must meet the overall objectives and resource conditions of the specific management zone in which they are located. This includes the Interim Guidelines for Wilderness Study Areas, Guidelines of the Northwest Forest Plan, or other land use plans that affect the KRNCA during the life of the RMP.

Consider access to private lands through public lands identified as Late-Successional Reserves (LSR), and recognize existing right-of-way grants, contracted rights, easements, and special use permits in the LSRs as valid uses. Consider new access proposals on a case-by-case basis to evaluate and mitigate adverse impacts on LSRs. Mitigation measures could include rerouting access outside the LSR, or including new road designs that minimize impacts.

Water Rights

Work to ensure that in-stream flows are sufficient to protect water related resource values such as fisheries, riparian habitat, and recreation needs. To accomplish this goal, BLM will apply for water rights on public lands, as appropriate.

Water Rights-of-Way

Implement water conservation measures for all federal activities. BLM-granted rights-of-way will contain stipulations to facilitate water conservation measures. The goal will be to protect in-stream flows and provide maximum benefits of diverted water.

3.6.3 Alternative A – Applies to All Zones

3.6.3.1 Land Acquisition

Acquire lands and interests in lands from willing sellers to improve fragmentation, and/or enhance management in accordance with the King Range Act.

3.6.3.2 Rights-of-Way

Rights-of-way and/or permits will be considered on a case-by-case basis.

3.6.3.3 Water Rights-of-Way

Continue to consider water right-of-way applications on a case-by-case basis.

3.6.3.4 Water Rights

The BLM will not seek additional water rights.

3.6.4 Alternative B

3.6.4.1 Land Acquisition

Backcountry and Frontcountry Zones

Acquire lands and interests in lands from willing sellers to reduce fragmentation, and/or enhance management in accordance with the King Range Act.

Residential Zone

Only acquire lands and interests in lands that have been proposed by the affected local governments. Acquisitions will clearly meet the intent of the overall management goals/objectives for this zone.

Adjacent to/or Outside Boundary

Only acquire lands and interests in lands that have been proposed by County governments, affected local governments, and/or local community associations. Acquisitions will clearly meet the intent of the overall management goals/objectives of the RMP, Northwest Forest Plan, or other land use plans that affect the KRNCA during the life of the RMP.

3.6.4.2 Rights-of-Way

Backcountry Zone

New rights-of-way and/or permits will not be issued in this zone. (Private landowner access and legal rights associated with each parcel will be addressed on an individual basis with each landowner and is not within the scope of this plan.)

Frontcountry Zone

Rights-of-way and/or permits will be considered on a case-by-case basis. Utility rights-of-way will be considered on, over, or across public lands that parallel County roads to accommodate private residents. Utility lines will be placed underground except where infeasible.

The existing communication site on Paradise Ridge (microwave repeater authorized under CACA 03078) will be maintained. New construction or alteration of the communication site would not be allowed.

3.6.4.3 Water Rights-of-Way

Rights-of-way for the diversion of surface water or appropriation of groundwater from public land within or adjacent to the KRNCA will not be allowed. This alternative provides the highest level of assurance that management actions will not result in adverse impacts to water quality, fisheries, and other water-related public resource values, but may cause a hardship on neighboring landowners.

3.6.4.4 Water Rights

BLM will apply for water rights in watersheds that appear likely to become fully allocated by the State Water Resources Control Board. Similarly, BLM will assert the water rights necessary to protect resource values on public lands within watersheds that are adjudicated in the future. It is unlikely that any of the coastal streams on the west slope of the King Range would become fully allocated since they are almost all public land and have minimal development. As the regional population grows, there is a much higher likelihood that streams in the Mattole River watershed could become fully allocated. For this reason, the BLM will document beneficial uses of water on public lands within the Mattole watershed to establish water rights in those cases.

This will ensure that water-related resource values are protected, except in cases where other water right holders in the watershed have seniority. Parties with a proven senior water right would be unaffected by BLM assertion of water rights.

3.6.5 Alternative C (Preferred)

3.6.5.1 Land Acquisition

Backcountry and Frontcountry Zones

Acquire lands and interests in lands from willing sellers to reduce fragmentation, and/or enhance management in accordance with the King Range Act.

Residential Zone

BLM will acquire lands only after working with affected local governments and community associations.

Adjacent to/or Outside Boundary

BLM will acquire lands within identified acquisition project areas that have been coordinated with county governments, and local community associations.

3.6.5.2 Rights-of-Way

Backcountry Zone

New rights-of-way and/or permits will not be issued in this zone. (An exception is private landowner access and legal rights associated with each parcel. These will be addressed on an individual basis with each landowner and are not within the scope of this plan.)

Frontcountry and Residential Zones

Rights-of-way and/or permits will be considered on a case-by-case basis, consistent with local planning, regulations directed by the California Coastal Commission, and overall management goals of the zones.

Utility rights-of-way will only be issued within existing corridors and placed underground except where infeasible

3.6.5.3 Water Rights-of-Way

New water rights-of-way that propose to divert surface water on public lands will be considered on a case-by-case basis and in all cases stipulate that surface water can only be diverted on public lands during the winter and spring months, when base flows are adequate.

Rights-of-way to appropriate groundwater from sources on public lands will also be considered on a case-by-case basis, and approved only when the effects on stream temperatures or sedimentation are negligible.

All new rights-of-way authorized will contain stipulations that address water conservation measures, including the installation of float valves on tanks, water meters to record usage, installation of water conserving fixtures, and appropriate reuse or reclamation of gray water.

The goal of this alternative is to encourage winter and spring storage of water for use during the dry summer and fall months, when stream flows and temperatures are at critical levels for sustaining fisheries and other aquatic resource values.

3.6.5.4 Water Rights

BLM will apply for water rights only after completing an inventory and assessing surface water sources within the KRNCA and adjacent public lands.

BLM will establish and maintain records of water demand for in-stream flows necessary to protect fisheries, riparian habitat, stock watering, micro-hydro power generation, and public drinking water supplies.

3.6.6 Alternative D

3.6.6.1 Land Acquisition

Same as Alternative C.

3.6.6.2 Rights-of-Way

Rights-of-way and/or permits will be considered on a case-by-case basis, including but not limited to utility corridors, roads, water facilities, and communication sites.

3.6.6.3 Water Rights-of-Way

New proposals to divert water will be considered on a case-by-case basis after the proponent has acquired a legal water right. The BLM would require the applicant to evaluate the potential effects to

public land resources. Standard stipulations would be required to ensure that adequate water conservation measures are applied and that water could be diverted only when in-stream flows are adequate.

This alternative facilitates the authorization of new rights-of-way to adjacent landowners and allows for additional water diversions in the future. However, this alternative provides minimal protection for in-stream flows and associated water-related resources.

3.6.6.4 Water Rights

Same as Alternative C.

3.7 WILDERNESS CHARACTERISTIC INVENTORY UNITS

3.7.1 Introduction

Management of Lands with Wilderness Characteristics is part of BLM's multiple-use mandate, and is recognized within the spectrum of resource values and uses. Lands with wilderness characteristics are defined as areas:

- Having been affected primarily by the forces of nature, with the imprint of man's work substantially unnoticeable
- Having outstanding opportunities for solitude or a primitive and unconfined type of recreation
- Having at least five thousand acres of land or of sufficient size as to make practicable its preservation and use in unimpaired condition
- Potentially containing ecological, geological, or other features of scientific, educational, scenic, or historical value

With exceptions, these lands must be managed to protect these values. They are also managed for the use and enjoyment of the American people and may be devoted to the public purposes of recreation, scenic, scientific, educational, conservation, and historical use. In addition, they could augment multiple-use management of adjacent and nearby lands through the protection of watersheds and water yield, wildlife habitat, natural plant communities, and similar natural values.

The KRNCA was inventoried as part of this RMP process for areas with wilderness characteristics, which were divided into identifiable subunits (see Figure 3-3). Alternative A does not include this survey, but Alternatives B, C, and D offer a range of acreages to be protected under the management guidelines listed in Appendix H. The wilderness characteristic inventory units all adjoin the existing King Range and Chemise Mountain Wilderness Study Areas (WSAs), which were studied under a separate planning process and EIS (see Section 2.6.1).

**Figure 3-3
Wilderness Character Assessment**

Wilderness Characteristic Inventory Units

- Wilderness Study Area

Land Management Status

- King Range National Conservation Area
- Planning Area Boundary
- Bureau of Land Management
- California State Park
- Recreation Site

Map Features:

- Paved Roads
- Unpaved Roads
- Unimproved Roads
- Hiking Trails
- Rivers and Streams

Geographical Labels:

- PETROLIA
- Mattole
- Mattole Road
- Lighthouse Road
- 1B
- 1C
- 1A
- 1E(a)
- 1E
- 1F
- 1G
- 1H(a)
- 1H
- 1J
- 2A
- 2B
- 2C
- Honeydew
- Honeydew Creek
- Ettersburg
- Thorn Junction
- Needle Rock
- Sinkyone Wilderness State Park
- Humboldt Redwoods State Park
- Black Sands Beach
- Abalone Point
- Seal Rock
- Mal Coombs Park
- Shelter Cove
- King Range National Conservation Area
- King Range Fire Station (COF)
- King Range Fire Station (BLM)
- King Range Office
- Hidden Valley Trailhead
- Nadelos Camp
- Walter Camp
- Chinquapin Trail
- Miller Camp
- Bear Hollow Camp
- Maple Camp
- Northside Peak Trailhead
- Kimsey Ridge Trailhead
- Griffin Ridge Trailhead
- Miller Loop
- King Crest Trail
- Griffin Ridge Trail
- Lost Coast Trail
- Spokane Ridge Trail
- Cooskie Creek Trail
- Cooskie Spur
- Punta Gorda Lighthouse
- Black Sands Beach
- Abalone Point
- Seal Rock
- Mal Coombs Park
- Shelter Cove
- King Range National Conservation Area
- King Range Fire Station (COF)
- King Range Fire Station (BLM)
- King Range Office
- Hidden Valley Trailhead
- Nadelos Camp
- Walter Camp
- Chinquapin Trail
- Miller Camp
- Bear Hollow Camp
- Maple Camp
- Northside Peak Trailhead
- Kimsey Ridge Trailhead
- Griffin Ridge Trailhead
- Miller Loop
- King Crest Trail
- Griffin Ridge Trail
- Lost Coast Trail
- Spokane Ridge Trail
- Cooskie Creek Trail
- Cooskie Spur
- Punta Gorda Lighthouse

Scale: 1:140,000
0 4,000 8,000 12,000 Feet
0 1 2 3 Miles

December 8, 2003 Source: US Department of the Interior, Bureau of Land Management, 2002; EDAW, Inc. 2002

Figure 3-3 Wilderness Character Assessment

- Wilderness Characteristic Inventory Units**
-  Wilderness Study Area
 -  Paved Roads
 -  Unpaved Roads
 -  Unimproved Roads
 -  Hiking Trails
 -  Rivers and Streams
- Land Management Status**
-  King Range National Conservation Area
 -  Planning Area Boundary
 -  Bureau of Land Management
 -  California State Park
 -  Recreation Site

1:140,000

4,000 0 4,000 12,000 Feet

3.7.2 Common to All Alternatives

Manage the 37,975 acres of existing WSAs identified in the 1988 Wilderness EIS under the BLM's "Interim Management Policy (IMP) For Lands Under Wilderness Review" (H-8550-1) until Congressional designation as Wilderness or release from WSA status.

For Alternatives B, C, and D, follow the guidelines identified in Appendix H in implementing administrative actions and determining allowable uses on lands outside of WSAs that are recommended for management to protect wilderness characteristics.

3.7.3 Alternative A

No Wilderness Characteristic Inventory Units would be identified.

3.7.4 Alternative B

Protect Wilderness Characteristics on five parcels (approximately 200 acres) within the King Range WSA that have been acquired since the Wilderness EIS was published in 1988. Any future lands acquired within the WSA boundaries would be managed to protect their wilderness characteristics. Protect wilderness characteristics on 10,260 acres adjacent to the existing King Range and Chemise Mountain WSAs. These areas include Wilderness Characteristic Inventory Subunits 1B, 1D, 1E, 1F, 1G, 1H, 1I, 1J, 2A, and 2B (see Figure 3-3). Manage these parcels to protect their wilderness characteristics and incorporate them into the Backcountry Management Zone. This would result in a Backcountry Management Zone of 47,579 acres to be managed for protection of wilderness characteristics. This alternative includes all inventory subunits that meet the minimum wilderness characteristic inventory criteria.

3.7.5 Alternative C

Protect Wilderness Characteristics on five parcels (approximately 200 acres) within the King Range WSA that have been acquired since the Wilderness EIS was published in 1988. Any future lands acquired within the WSA boundaries would be managed to protect their wilderness characteristics. Protect wilderness characteristics on 6,721 acres adjacent to the existing King Range and Chemise Mountain WSAs. These areas include Wilderness Characteristic Inventory Subunits 1E (except subunit 1E(a), the Mill Creek portion), 1F, 1G, 1H, and 2A (see Figure 3-3). Manage these parcels to protect their wilderness characteristics and incorporate them into the Backcountry Management Zone. This would result in a Backcountry Management Zone of 44,040 acres to be managed for protection of wilderness characteristics. This alternative incorporates inventory subunits that have high-quality wilderness characteristics and that complement the values of the existing WSAs.

3.7.6 Alternative D (Preferred)

Protect Wilderness Characteristics on five parcels (approximately 200 acres) within the King Range WSA that have been acquired since the Wilderness EIS was published in 1988. Any future lands acquired within the WSA boundaries would be managed to protect their wilderness characteristics. This would

result in a Backcountry Management Zone of 37,319 acres to be managed for protection of wilderness characteristics.

The boundary in this alternative follows ridgetops, roads, and fire breaks, allowing for a mix of management actions and land use allocations that protect wilderness characteristics within the core of the King Range backcountry. It also provides for an interface of BLM lands outside of the Backcountry Zone where fuels reduction and other activities can be implemented to protect private lands adjoining the King Range from wildfire.

All of the wilderness characteristic inventory subunits meet the inventory criteria of visually appearing to be affected primarily by the forces of nature. However, parts of the units have been affected by past timber harvesting and have suffered ecological damage. Retaining these units in the Frontcountry Zone will allow for more intensive forest and watershed restoration activities. The acreage proposed for management to protect wilderness characteristics in this plan, although it does not extend beyond the existing WSA boundary, is still 12,359 acres more than the 24,960 acres recommended by the BLM to Congress for Wilderness designation in the 1988 Wilderness EIS. No actions proposed in this plan would result in irreversible or irretrievable impacts that would affect the future consideration of the units for wilderness characteristic protection (see Chapter 4).

3.8 WILD AND SCENIC RIVERS

3.8.1 Introduction

As part of the RMP process, a review was conducted in 2003 to assess and evaluate all river segments in the KRNCA for eligibility for inclusion in the National Wild and Scenic River (WSR) System (see Figure 3-2). A description of the evaluation process and proposed designations is located in Appendix C.

3.8.2 Alternative A

The “no action” alternative for Wild and Scenic Rivers does not recommend any river segments for inclusion into the National Wild and Scenic River System (NWSRS). In this scenario, BLM would protect values associated with river segments through management actions other than National Wild and Scenic River designation.

King Range National Conservation Area

Figure 3-2
Eligible and Suitable Wild & Scenic Rivers

Preliminary Classifications

- Wild
- Scenic
- Recreational

Land Management Status

- King Range National Conservation Area
- Planning Area Boundary
- Bureau of Land Management
- California State Park
- Recreation Site

Scale: 1:140,000

Legend:

- Paved Roads
- Unpaved Roads
- Unimproved Roads
- Hiking Trails

Map Labels:

- PETROLIA
- Mattole Road
- Mattole
- Windy Point
- Punta Gorda Lighthouse
- Coos Bay Creek
- Fourmile Creek
- Spanish Creek
- Squire Creek
- Spanish Ridge Trailhead
- Kinsey Ridge Trailhead
- Northside Peak Trailhead
- Miller Camp
- Bear Hollow Camp
- Maple Camp
- Lightning Trailhead
- Honeydew Creek
- Honeydew
- Bull Creek Road
- Ettersburg Road
- ETTERSBURG
- THORN JUNCTION
- Black Sands Beach
- Abalone Point
- Seal Rock
- Mal Coombs Park
- Shelter Cove
- Needle Rock
- Sinkyone Wilderness State Park
- Humboldt Redwoods State Park
- King Range Office
- King Range Fire Station (BLM)
- Thorn Fire Station (CDF)
- Hidden Valley Trailhead
- Naditos Camp
- Wailan Camp
- Chiquapin Trail
- Combs Mtn Road
- Ball Harbor Road
- Ball Harbor

December 8, 2003 Source: US Department of the Interior, Bureau of Land Management, 2002; EDAW, Inc. 2002

Preliminary Classifications

- Paved Roads
- Unpaved Roads
- Unimproved Roads
- Hiking Trails

Land Management Status

-  King Range National Conservation Area
 Planning Area Boundary
 Bureau of Land Management
 California State Park
 Recreation Site



3.8.3 Alternative B

This alternative would find all 28 eligible river segments shown in Figure 3-2 as suitable for inclusion in the NWSRS. The BLM would place all suitable river segments under protective management until a final decision is made by Congress.¹ The mouth of the Mattole River and Estuary would receive preliminary classifications as a scenic river area, as well as Mill Creek and South Fork Bear Creek north of Shelter Cove Road. The remaining portion of South Fork Bear Creek, south of Shelter Cove Road, would be preliminarily classified as a recreational river area; while the remainder of the eligible streams in the King Range would all receive preliminary classification as wild river areas.

3.8.4 Alternative C

Under this alternative, fifteen of the river segments would be recommended as suitable for inclusion in the NWSRS. These include: South Fork Bear Creek (Segments A and B), Big Creek, Big Flat Creek, Buck Creek, Gitchell Creek, Honeydew Creek, Horse Mountain Creek, Kinsey Creek, Mattole River, Mill Creek, Oat Creek, Randall Creek, Shipman Creek, and Spanish Creek. The BLM would place all suitable river segments under protective management until a final decision is made by Congress. Preliminary classifications for all river segments would be the same as Alternative B.

3.8.5 Alternative D (Preferred)

Under this alternative, eight eligible river segments on seven different streams would be recommended as suitable for inclusion in the NWSRS. These include: South Fork Bear Creek (Segments A and B), Big Creek, Big Flat Creek, Honeydew Creek, Gitchell Creek, Mattole River, and Mill Creek. The BLM would place all suitable river segments under protective management until a final decision is made by Congress.¹ Preliminary classifications for all river segments would be the same as Alternatives B and C.

Appendix C lists management guidance under interim protection for specific program areas.

¹ Protective Management: When a river is determined eligible and given a tentative classification (wild, scenic, and/or recreational), its identified Outstanding Resource Values (ORVs) shall be afforded adequate protection, subject to valid existing rights, and until the eligibility determination is superseded, management activities and authorized uses shall not be allowed to adversely affect either eligibility or the tentative classification. Public notification of protective management shall occur no later than publication and release of the draft RMP, or plan amendment. However, protective management shall be initiated by the authorized officer as soon as eligibility is determined. Specific management prescriptions for eligible river segments should provide protection in the following ways:

- Free-flowing Values: The free-flowing characteristics of eligible river segments cannot be modified to allow stream impoundments, diversions, channelization, and/or rip-rapping to the extent the BLM is authorized under the law.
- River-related Values: Each segment shall be managed to protect identified outstandingly remarkable values (subject to valid existing rights) and, to the extent practicable such values shall be enhanced.
- Classification Impacts: Management and development of the eligible river and its corridor cannot be modified, subject to valid existing rights, to the degree that its eligibility or tentative classification would be affected. Should a nonsuitable determination be made in the RMP process, then the river shall be managed in accordance with management objectives as outlined in the plan document.

3.9 AREAS OF CRITICAL ENVIRONMENTAL CONCERN

3.9.1 Introduction

Areas of Critical Environmental Concern (ACECs) are areas of public land where special management attention is required to protect important natural and/or cultural resource values. The ACEC designation indicates to the public that the BLM recognizes these significant values, and has established special management measures to protect them. These alternatives either maintain the current management of a single designated ACEC in the King Range, at the Mattole Estuary, or propose an additional ACEC designated in the Mill Creek Watershed.

3.9.2 Common to All Alternatives

Continue management of the 655-acre Mattole Estuary Area of Critical Environmental Concern (ACEC) to protect significant archaeological sites, the fragile sand dune ecosystem, and riparian areas/ wildlife values in the Mattole Estuary and coastal strand south to Sea Lion Gulch.

3.9.3 Alternative A

No additional ACECs would be designated.

3.9.4 Alternative B

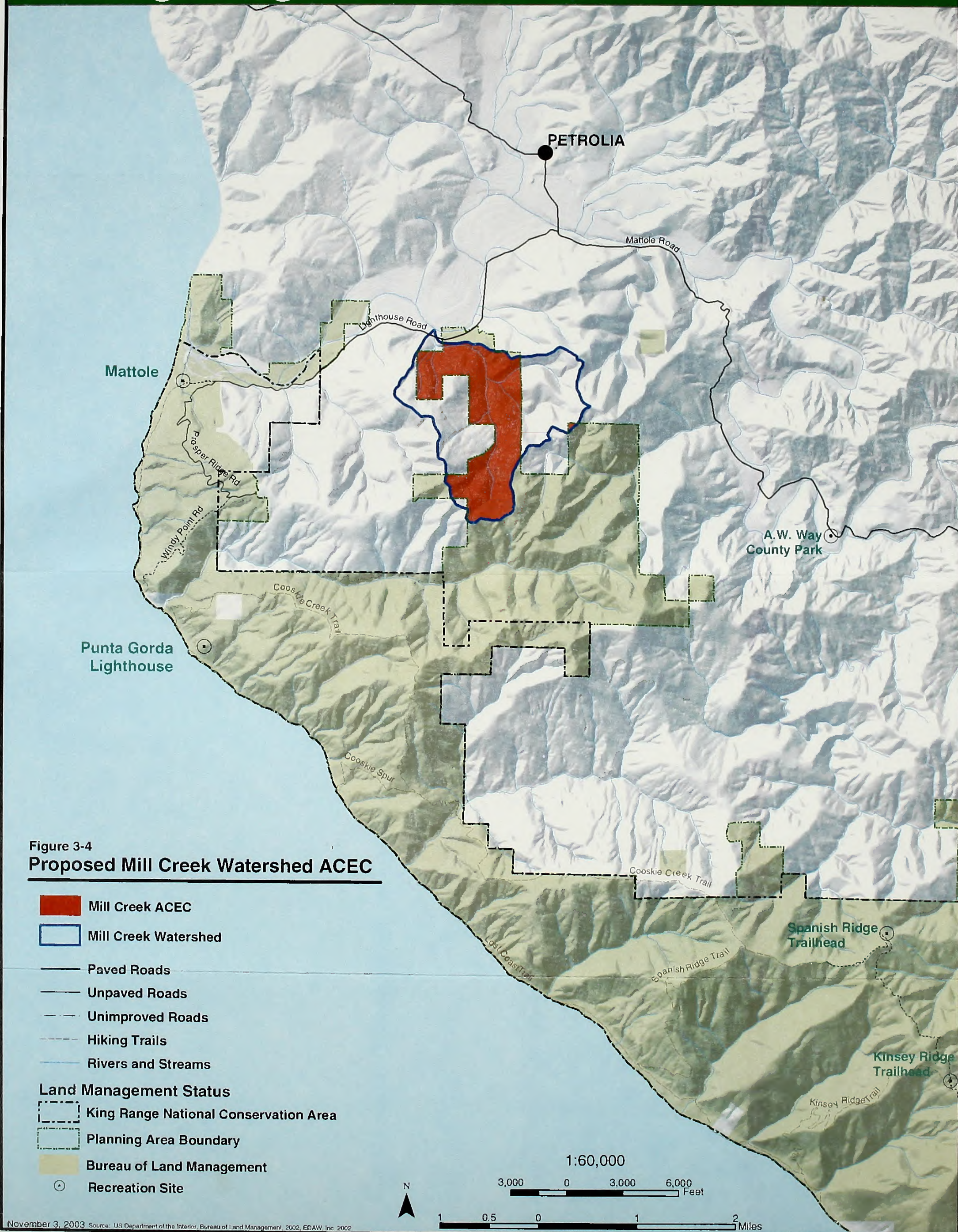
Same as Alternative A.

3.9.5 Alternative C (Preferred)

The Mill Creek Watershed ACEC would be established and would include all BLM managed lands (approximately 680 acres) in the Mill Creek Watershed. The primary features that would be protected by this designation are the water quality of this important anadromous fish stream/cold water tributary to the Mattole River, and the low-elevation old-growth Douglas fir forest. Any additional lands or interests in lands acquired by the BLM in the Mill Creek Watershed would be automatically incorporated into the ACEC (see Figure 3-4).

“Special management attention” is needed for the Mill Creek ACEC to protect the sensitive old-growth Douglas fir forest and the important anadromous fish stream/cold water tributary to the Mattole River. Special rules proposed for the area focus on allowable public uses, including: 1) Day-use only (no overnight camping); 2) No campfires; and 3) Pets must be on a leash. These rules apply on public lands in the watershed (presently 680 acres). Additional rules may be proposed for the area through an Activity Plan to be developed with public participation.

King Range National Conservation Area





Mill Creek ACEC looking north from Prosper Ridge, Mattole Valley in the distance.

3.9.6 Alternative D

Same as Alternative C.

3.10 AQUATIC ECOSYSTEMS AND FISHERIES

3.10.1 Introduction

The desired condition for all streams within the KRNCA is that physical, chemical, and biological components of stream habitat are maintained in a manner such that each stream or stream reach supports a desired compliment of native species appropriate for the capability of each stream or stream reach. Thus, the stream habitat and water quality conditions for small, headwater stream may be quite different than conditions in large, salmon-bearing streams since the habitat capability and native fauna of these two types of stream are quite different.

In general, the desired condition for all streams within the KRNCA includes the following: water temperatures will be supportive of cold water species; water will generally be non-turbid except during storm events; contaminants would not be found at levels which would negatively impact native species; exotic species will be absent or limited to the extent where they are not impacting native species; human-caused migration barriers will be absent; in-channel large woody debris will be present at levels which promote diverse habitat conditions; riparian areas will provide adequate shade and potential for recruitment of future large woody debris; water discharge is not effected by human activities (amount, duration, and timing); floodplains (where present) would be intact and regularly inundated with flood waters; streambed substrate would support habitat requirements of native fauna; and, the amount of sediment stored in stream channels would not substantially impact habitat quality for native species.

The conditions of the streams in the KRNCA are a function of heavy and often intense rainfall upon steep, erodible, generally forested terrain. These conditions have led to a very high channel density on the landscape. For example, the Bear Creek watershed contains over fourteen miles of stream channel per square mile of land, which means that Bear Creek contains approximately 300 miles of stream channels. The great majority are ephemeral (flowing only in response to rainfall) or intermittent (not flowing year round), and only about fifteen miles of stream in Bear Creek support populations of salmon and steelhead. However, because the vast network of smaller streams collectively influences conditions in larger streams, protection of these smaller streams and stream networks influences habitat conditions and trends in downstream habitat occupied by listed Pacific salmonids. Thus, the KRNCA represents a unique ecosystem that is important to the survival and recovery of native species.

3.10.2 Common to All Alternatives

3.10.2.1 Goals

The overall goal for the KRNCA is to restore and maintain the ecological health of watersheds and aquatic ecosystems on public lands, and, to the extent possible, partner with other landowners to coordinate restoration efforts across watersheds.

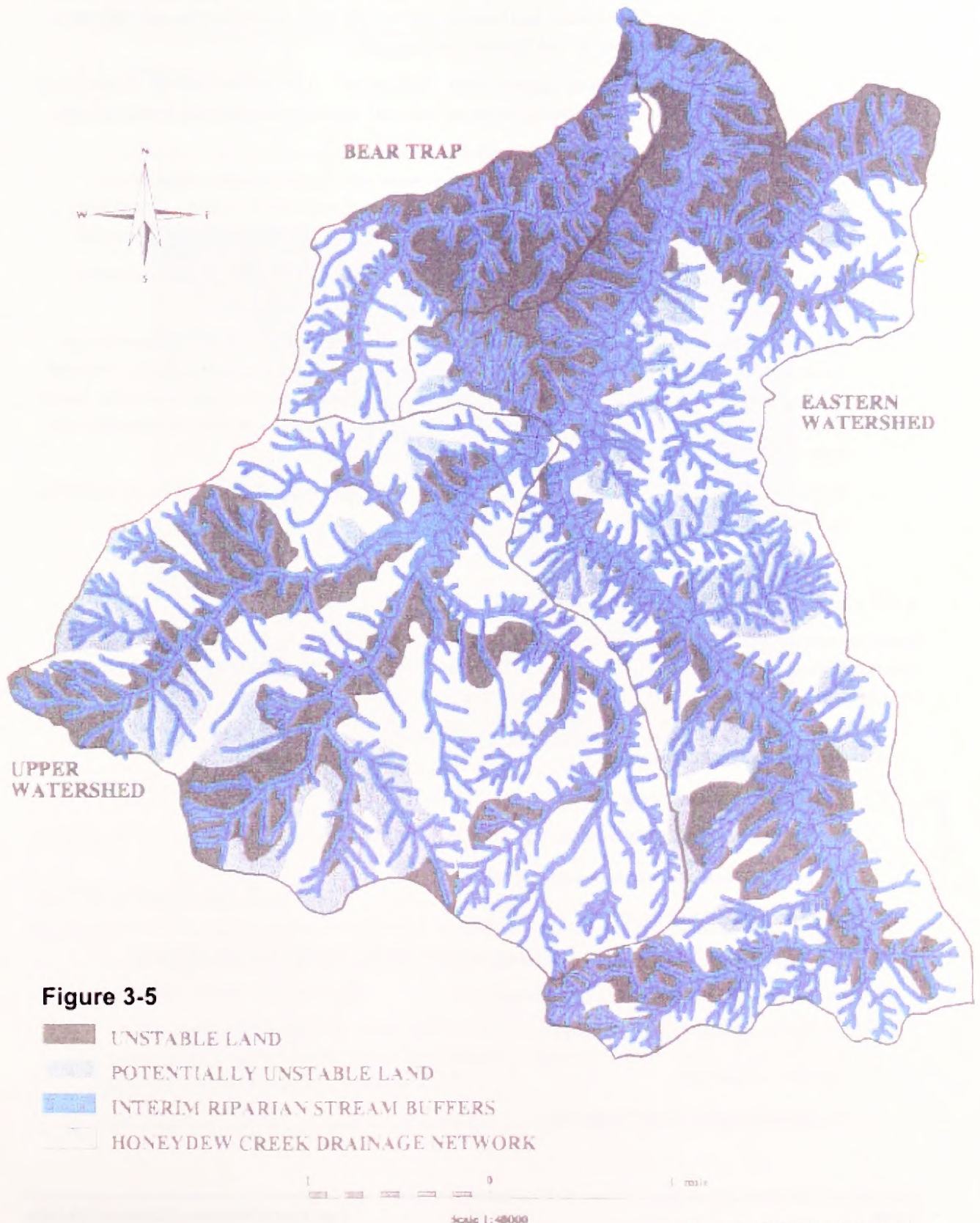
The KRNCA contains important habitat for species listed under the Endangered Species Act (ESA). Relative to aquatic habitat, one of the most critical land allocations in the KRNCA are the vast network of Riparian Reserves (RRs) that consist of lands along streams and unstable or potentially unstable areas. Riparian Reserves generally parallel the stream network but also include other areas necessary for maintaining hydrologic, geomorphic, and ecological processes. The Riparian Reserve network has not yet been mapped for the entire KRNCA. Watersheds within the area will be mapped on an as-needed basis as an implementing action of this plan, using the location criteria contained in Appendix D. The Honeydew Creek watershed has been mapped and is shown in Figure 3.5 as an example of the extent of the Riparian Reserve network on KRNCA public lands. The Riparian and Aquatic Standards and Guidelines (S&Gs) listed in Appendix D will be used to ensure that management activities and public uses in Reserves do not retard or prevent attainment of management objectives (listed below), and to maintain productivity and resiliency of riparian and aquatic ecosystems and the species that depend on them.

3.10.2.2 Objectives

BLM-administered lands within the KRNCA will be managed to:

- Maintain and restore the distribution, diversity, and complexity of watershed and landscape-scale features to ensure protection of the aquatic systems to which species, populations, and communities are uniquely adapted.
- Maintain and restore spatial and temporal connectivity within and between watersheds. Lateral, longitudinal, and drainage network connections include floodplains, wetlands, upslope areas, headwater tributaries, and intact refugia. These network connections must provide chemically and physically unobstructed routes to areas critical for fulfilling life history requirements of aquatic and riparian-dependent species.

HONEYDEW CREEK WATERSHED INTERIM RIPARIAN RESERVES



- Maintain and restore the physical integrity of aquatic systems, including shorelines, banks, and bottom configurations.
- Maintain and restore water quality necessary to support healthy riparian, aquatic, and wetland ecosystems. Water quality must remain within the range that maintains the biological, physical, and chemical integrity of the system and benefits survival, growth, reproduction, and migration of individuals composing aquatic and riparian communities.
- Maintain and restore the sediment regime under which aquatic ecosystems evolved. Elements of the sediment regime include the timing, volume, rate, and character of sediment input, storage, and transport.
- Maintain and restore in-stream flows sufficient to create and sustain riparian, aquatic, and wetland habitats and to retain patterns of sediment, nutrient, and wood routing. The timing, magnitude, duration, and spatial distribution of peak, high, and low flows must be protected.
- Maintain and restore the timing, variability, and duration of floodplain inundation and water table elevation in meadows and wetlands.
- Maintain and restore the species composition and structural diversity of plant communities in riparian areas and wetlands to provide adequate summer and winter thermal regulation, nutrient filtering, appropriate rates of surface erosion, bank erosion, and channel migration and to supply amounts and distributions of coarse woody debris sufficient to sustain physical complexity and stability.
- Maintain and restore habitat to support well-distributed populations of native plant, invertebrate, and vertebrate riparian-dependent species.

3.10.2.3 *Management Actions*

Based on existing knowledge of aquatic habitat conditions in the KRNCA and the need to manage riparian-dependent resources to maintain or restore desired conditions, the following five categories of management actions were identified for consideration:

1. Upslope Sediment Reduction
 - road decommissioning
 - landslide rehabilitation
 - road drainage maintenance and upgrades
2. Instream Habitat Enhancement
 - creation of pool habitat, or improving pool habitat by addition of cover elements
 - increasing instream cover (large wood)
 - spawning habitat enhancement
3. Riparian Silviculture
 - planting native riparian species

- thinning overstocked stands to enhance native species composition and to improve riparian function
4. Monitoring (to assess existing conditions of key indices and to detect trends over time)
 - water quality indicators
 - habitat/channel condition indicators
 - biological indicators
 5. Estuary Enhancement
 - Large wood enhancement projects implemented in coordination with local watershed restoration groups



Road decommissioning requires the use of heavy equipment.

3.10.2.4 Criteria for Implementation of Management Actions

Sediment Reduction Projects

Implementation of sediment reduction projects in KRNCA watersheds will be considered if:

1. Project implementation could result in long-term improvement of habitat for native fauna, especially salmon and steelhead.
2. An inventory and/or analysis of potential sediment sources within a watershed indicates that treatment of a particular site would be among the highest priorities within a watershed or of significant value for sediment reduction.
3. Adequate access to the project site(s) exists for implementation and post-project monitoring.

4. Project implementation would not substantially interfere with identified access to private lands, recreation facilities, fuel breaks, or other such necessary access.

Instream Habitat Improvement Projects

Implementation of instream habitat improvement projects in KRNCA streams will be considered if:

1. Project implementation would provide beneficial habitat for salmon, steelhead, or other desired native species.
2. Analysis has shown that the project would address habitat conditions limiting survival of target species at a particular life stage.
3. Adequate access to the project site(s) exists for implementation and post-project monitoring.
4. The project would not create a hazard for KRNCA visitors or other recreations.
5. The project will comply with the Wild and Scenic River Act for all “suitable” stream segments.

Riparian Silviculture Projects

Implementation of riparian silviculture projects will be considered if:

1. Project implementation would provide beneficial habitat for salmon, steelhead, or other desired native species.
2. Analysis has shown that the project will address long term recruitment of large woody debris, provide adequate stream shade, and input of organic matter.
3. Local impacts from any canopy removal will not result in significant alteration of summer water temperatures, sediment input, or long-term input in organic matter.

Monitoring

Implementation of stream, biotic, or watershed monitoring will be considered if:

1. The outcome of monitoring will assist in implementing the Resource Management Plan, recovery of listed species, or increasing the knowledge base of the resources.
2. Storage, analysis, and reporting of monitoring data are planned prior to data collection.
3. The impacts of monitoring will not substantially interfere with other goals and objectives contained in the RMP.
4. Priority will be given to those streams which contain listed aquatic species.

Estuary Enhancement

Implementation of enhancement projects in the Mattole Estuary will be considered if:

1. Project implementation would provide beneficial habitat for salmon, steelhead, or other desired native species.

2. Analysis has shown that the project would address habitat conditions limiting survival of target species at a particular life stage.
3. The project would not create a hazard for KRNCA visitors or other recreationists.

3.10.3 Alternative A

Implement upslope sediment reduction, instream habitat enhancement, riparian silviculture, and monitoring actions in Mattole Basin in fish bearing streams. Implement estuary enhancement.

3.10.4 Alternative B

Implement only upslope sediment reduction actions in Mattole Basin in fish bearing watersheds; do not implement instream habitat enhancement, riparian silviculture, and monitoring actions, nor estuary enhancement.

Allowable uses that could potentially affect aquatic habitat in the KRNCA will be guided by determining consistency with Management Objectives as well as Riparian and Aquatic S&Gs (Appendix D), which are specific to ongoing or future proposed land management activities.

3.10.5 Alternative C (Preferred)

Implement upslope sediment reduction, instream habitat enhancement, riparian silviculture, and monitoring actions in Mattole Basin in fish bearing watersheds. Implement estuary enhancement.

Allowable uses that could potentially affect aquatic habitat in the KRNCA will be guided by determining consistency with Management Objectives as well as Riparian and Aquatic S&Gs (Appendix D), which are specific to ongoing or future proposed land management activities.

3.10.6 Alternative D

Implement upslope sediment reduction, instream habitat enhancement, riparian silviculture, and monitoring actions KRNCA-wide. Implement estuary enhancement.

Allowable uses that could potentially affect aquatic habitat in the KRNCA will be guided by determining consistency with Management Objectives as well as Riparian and Aquatic S&Gs (Appendix D), which are specific to ongoing or future proposed land management activities.

3.11 WILDLIFE

3.11.1 Introduction

These alternatives all include cooperative management with the California Department of Fish and Game (CDFG) and the U.S. Fish and Wildlife Service (FWS) to achieve, maintain, and enhance natural wildlife populations, protect habitat, prevent damage, and increase public education. They include a range of

specific actions for six sensitive wildlife species with habitat occurring in the KRNCA, as well as other management issues involving management and monitoring of wildlife populations and the habitats they rely on.

3.11.2 Common to All Alternatives

3.11.2.1 *Threatened and Endangered Species*

BLM's objective is to work with federal, state, and local partners to minimize or eliminate the need for additional listing of species under the Endangered Species Act and to contribute to the recovery of the species already listed as such. The BLM will take measures to promote the recovery and conservation of all special status animal species within the King Range. This will be in accordance with applicable Endangered Species Act of 1973 regulations (50CFR402) and BLM policy (6840 Manual, IM UT No. 97-66).

Management actions for both threatened and endangered species, as well as BLM Special Status species apply to Backcountry, Frontcountry, and Residential Management Zones. Six wildlife species listed as threatened or endangered which are known to occur or have the potential to occur in the King Range are:

- Brown Pelican (Federal Endangered)
- Bald Eagle (Federal Threatened, Federal Proposed for Delisting)
- Western Snowy Plover (Federal Threatened)
- Marbled Murrelet (Federal Threatened)
- Northern Spotted Owl (Federal Threatened)
- Northern (Steller's) Sea Lion (Federal Threatened)

3.11.2.2 *Other Wildlife*

The goal for wildlife populations in the King Range is to maintain or enhance populations of appropriate native species and to increase the knowledge base for these species.

Migratory Birds

Guidelines for the management of migratory birds are in the Executive Order (13186) for Conservation of Migratory Birds (January 11, 2001). Of the approximately 900 migratory birds occurring in the United States, 122 were selected species of management concern at the national level, known as the U.S. Fish and Wildlife Service Migratory Nongame Birds of Management Concern (MNBMC). Migratory bird species on this list occur within the KRNCA and contiguous lands. Birds on the MNBMC list known to occupy the King Range (either presently or historically) include northern goshawk, white-tailed kite, peregrine falcon, Vaux's swift, black swift, rufous hummingbird, Allen's hummingbird, red-breasted sapsucker, olive-sided flycatcher, Pacific slope flycatcher, yellow-breasted chat, and California thrasher. The management goals will generally be achieved by habitat protection and enhancement as described in the Vegetation and Fisheries sections; specific management actions for each alternative are described below.

Herpetofauna

Restore aquatic and terrestrial habitat suitable for appropriate native species. The southern torrent salamander, foothill yellow-legged frog, northern red-legged frog, tailed frog, and northwestern pond turtle are California state species of special concern and federal species of concern that potentially occur in the King Range. All alternatives will restore natural ecosystems and avoid disturbance to known populations during project activities. Much of this objective will be met with the aquatic and riparian management actions described in the Fisheries section.

Intertidal Habitat

Although these habitats are technically outside of BLM's jurisdiction, BLM brings people into this area and is (partially) responsible for their affects to this resource. In all alternatives, BLM will manage visitors in an attempt to maintain the natural diversity of intertidal organisms in this special habitat, and work cooperatively with CDFG in the management of marine life.

Game Species

The goal of game management in the King Range is to host a natural complement of species at population levels consistent with the habitat management goals outlined elsewhere in this document, and in a manner consistent with CDFG regulations. For all alternatives, BLM will provide a mix of habitats necessary to support diverse and appropriate population levels of wildlife game species; specific management actions can be found in the Terrestrial Ecosystems and Vegetation section (Section 3.8).

Wildlife Introductions

In all alternatives, the BLM will maintain, restore, and enhance historic levels of wildlife species native to the King Range. Non-native species will not be encouraged in the King Range. Wildlife introductions are not a stated objective in any of the alternatives, however BLM will work cooperatively to assess the suitability of reintroductions proposed by Fish and Game and other entities that are consistent with this goal.

3.11.3 Alternative A

3.11.3.1 Threatened and Endangered Species

Brown Pelicans

These birds occur at the interface between the King Range and the Pacific Ocean, using offshore rocks as roosting sites. Disturbance at roosting sites will be minimized. No specific management actions are planned.

Bald Eagles

Enhance the existence of habitat should they colonize the King Range area. No specific management actions are planned.

Western Snowy Plovers

Monitor for nesting plovers by continuing monthly breeding season surveys at the Mattole River mouth and at gravel bars on the lower Mattole.

Marbled Murrelets

Preserve existing potential nesting habitat and accelerate the development of late-successional forest characteristics in stands that have been previously harvested. Conduct project-level marbled murrelet protocol surveys in appropriate habitat prior to project implementation.

Northern Spotted Owls

Protect existing habitat and increase the availability of suitable habitat for nesting and roosting so as to twelve to fourteen pairs of owls in the King Range. This will be achieved by maintaining late successional forests where they exist and encouraging the development of late-successional forests at sites that have been converted to early successional stages by timber harvest or large scale fires and by minimizing disturbance to nesting owls. Project level assessments and consultation with the FWS will be completed for activities potentially impacting spotted owls. Monitoring known owl sites and periodic surveys of the suitable habitat in the King Range will help determine trends in owl activity center numbers, locations and productivity.

Steller's Sea Lions

This species occurs at the interface between the King Range and the Pacific Ocean, using selected offshore rocks as roosting and potential breeding sites. No specific management actions are planned.

3.11.3.2 Other Wildlife

No specific management actions are planned for any of the other wildlife categories.

3.11.4 Alternative B

3.11.4.1 Threatened and Endangered Species

Same as Alternative A for brown pelicans, bald eagles, and Steller's sea lions.

Western Snowy Plovers

BLM will encourage the existence of habitat for snowy plovers should they colonize the Mattole River mouth area, but no specific management actions are planned.

Marbled Murrelets

Preserve existing potential nesting habitat and conduct project-level protocol surveys in appropriate habitat prior to project implementation.

Northern Spotted Owls

Protect existing habitat for nesting and roosting by maintaining late successional forests where they exist. Project level assessments and consultation with the FWS will be completed for activities potentially impacting spotted owls, and monitoring known owl sites in the King Range will help determine trends in owl activity center numbers, locations and productivity.

3.11.4.2 Other Wildlife

Same as Alternative A.

3.11.5 Alternative C (Preferred)

3.11.5.1 Threatened and Endangered Species

Brown Pelicans

Disturbance at roosting sites will be minimized, and roost sites on the offshore rocks will be protected by working cooperatively with the California Coastal National Monument.

Bald Eagles

Enhance the existence of habitat should they colonize the King Range area. Healthy populations of anadromous fish (an important component of eagles' diet) will be encouraged by actions described in the fisheries section of this document. Large trees will be encouraged to develop along major watercourses to provide perch sites and potential nesting sites.

Western Snowy Plovers

Protect and enhance beach habitat at the mouth of the Mattole River to provide suitable nesting habitat for nesting/wintering plovers if/when the population responds to the recovery plan and re-colonize the area. Continue monthly breeding season surveys at the Mattole River mouth and at gravel bars on the lower Mattole.

Marbled Murrelets

Preserve existing potential nesting habitat and accelerate the development of late-successional forest characteristics in stands that have been previously harvested and conduct project-level protocol surveys in appropriate habitat prior to project implementation. Given the lack of murrelet detections in spite of extensive surveys, no other management objective is considered appropriate. Management actions taken for the protection and enhancement of late-successional forest stands and late-successional forest

characteristics in younger stands will be consistent with management objectives for all old-growth associated species.

Northern Spotted Owls

Protect existing habitat and increase the availability of suitable habitat for nesting and roosting. Establish sufficient habitat to attract and maintain twenty breeding pairs of spotted owls in the King Range. This goal is consistent with the Northwest Forest Plan objectives to restore and enhance late successional habitat within the range of the northern spotted owl.² Project level assessments and consultation with the FWS will be completed for activities potentially impacting spotted owls. Monitoring known owl sites and periodic surveys of the suitable habitat in the King Range will help determine trends in owl activity center numbers, locations, and productivity.

² Regional Perspective for owl recovery: The conservation and recovery strategies for the northern spotted owl are founded in the basic tenets of conservation biology as described by Thomas (ISC 1990).

1. Species well-distributed across their range are less prone to extinction.
2. Large blocks of habitat, containing multiple pairs are superior to small blocks.
3. Blocks of habitat that are close together are better than blocks far apart.
4. Habitat that is less fragmented is better than fragmented habitat
5. Habitat between blocks facilitates dispersal when it more closely resembles suitable habitat

All iterations of owl recovery planning include a system of designated “reserves” capable of sustaining appropriate numbers of interacting owl populations (ideally 20 pair areas) spaced across a general landscape (matrix) in a configuration which provides for an interchange (emigration and immigration) of dispersing owls among these reserves. Each planning iteration has also described recovery of the species in the California Coastal Province as being limited by the lack of federal ownership, and thus the lack of capability of any strictly federal strategy to provide adequate habitat over time. A planning group assembled by the California Board of Forestry (BOF) attempted in the early 1990s to develop a Habitat Conservation Strategy which could be applied to private lands to augment the federal strategy in California. The preferred alternative presented to the BOF included a comprehensive approach to establishing “Multiple Pair Areas” (MPAs) on private lands in a configuration which would mimic the size and spacing of reserves in the federal strategy. In this alternative, in the southern portion of the California range of the owl, it was found that not only were the opportunities to maintain pairs on federal lands limited south of federal holdings in the South Fork Eel River and the KRNCA, but the opportunities to establish MPAs on private lands were limited as well. This was due to the increasingly fragmented nature of owl habitat in generally a northwest to southeast gradient extending south roughly from the Jackson State Forest on the west and the northern Mendocino National Forest boundary on the east. The BOF strategy necessarily abandoned the MPA approach in this fragmented southern oak-hardwood zone adopting a strategy of managing for individual pairs wherever they occur with a goal of simply maintaining the range of the owl in this region.

The analyses of owl recovery opportunities all underscore the importance of the King Range as the southernmost federal holding of coastal habitat in the California range of the species with potential to maintain a significant number of interacting pairs. Currently the King Range provides habitat for fifteen owl activity centers with reasonably good connectivity to owl populations in the South Fork Eel, Gilham Butte, and Humboldt Redwoods State Park. Analyses of habitat capabilities within the King Range indicate high potential for establishing additional activity centers on acquired lands which were previously harvested, particularly in the Bear Creek and Honeydew Creek watersheds. These gains would be achieved over time as in-growth and management of these stands promote forest structure suitable for owl nesting.



The KRNCA can potentially support up to twenty pairs of northern spotted owls.

Source: Amy Krause, BLM

Steller's Sea Lions

Disturbance at haul-out sites will be minimized. Haul-out sites on the offshore rocks will be protected by working cooperatively with the California Coastal National Monument. An outreach program will be developed to educate people using boats to access the King Range shoreline.

3.11.5.2 Other Wildlife

Migratory Birds

Avoid and minimize, to the extent practicable, adverse impacts on migratory bird resources when conducting habitat restoration activities. Restore and enhance habitat for migratory birds to a "pre-mechanized treatment landscape." Prevent or abate pollution or detrimental alteration of environmental characteristics of benefit to migratory birds. Design an "all bird" monitoring plan to provide long term data regarding bird populations and their habitats. The design of this monitoring program will be such that it can be implemented opportunistically as a part of other survey efforts, or as a stand-alone effort. Basic components of this plan will include the use of bird point counts or area searches (Ralph et al. 1993) with the intent of gathering statistically valid samples to assess the long-term effectiveness of management activities. Collaboration with other entities such as Partners in Flight, Forest Service research personnel, or graduate students will be encouraged for this monitoring effort.

Intertidal Habitat

In addition to cooperating with CDFG, also educate visitors to the intertidal habitat to help reduce their impact on species not covered by existing fishing and marine mammal protection regulations and enhance understanding of the existing regulations.

Wildlife Introductions

Roosevelt elk have recently been reestablished in the southern part of the King Range. Casual monitoring of this population, including its interaction with human populations outside of the King Range, will continue.

3.11.6 Alternative D

3.11.6.1 Threatened and Endangered Species

Same as Alternative C for all six species.

3.11.6.2 Other Wildlife

Migratory Birds

Avoid and minimize, to the extent practicable, adverse impacts on migratory bird resources when conducting habitat restoration activities. Restore and enhance habitat for migratory birds to a “pre-mechanized treatment landscape.” Prevent or abate pollution or detrimental alteration of environmental characteristics of benefit to migratory birds. Design and implement an “all bird” monitoring plan to provide long term data regarding bird populations and their habitats as a stand-alone effort. Basic components of this plan will include the use of bird point counts or area searches (Ralph et al. 1993) with the intent of gathering statistically valid samples to assess the long-term effectiveness of management activities. Collaboration with other entities such as Partners in Flight, Forest Service research personnel or graduate students will be encouraged for this monitoring effort.

Intertidal Habitat

Same as Alternative C.

Wildlife Introductions

Same as Alternative C.

3.12 TERRESTRIAL ECOSYSTEMS AND VEGETATION

3.12.1 Introduction

BLM will manage the vegetative resources of the King Range to promote the overall health of this diverse biogeographical region and to provide for the wide spectrum of organisms, ecosystem processes, and human resource needs that depend upon these plant communities. Specific goals, objectives, and actions in these alternatives address particular habitat types found in the King Range, special status species, and other aspects of vegetation management. Actions detailed for the various vegetative resources apply to all three management zones unless otherwise specified.

3.12.2 Common to All Alternatives

3.12.2.1 *Habitats*

The goal of management of habitats for all the alternatives is intended to produce and/or maintain a mosaic of compositionally and structurally diverse habitat types and plant communities that have historically (prior to European settlement) occurred in the King Range. Specific management objectives and actions have been identified in this plan for coastal dunes, coastal scrub, grasslands, and chaparral habitats. (For discussion of forested habitats and grazing management on grasslands, see those individual sections.)

3.12.2.2 *Special Status Species*

All alternatives will also maintain and encourage viable populations of threatened, endangered, and BLM Special Status plant species known to occur in the King Range. The management actions for threatened and endangered species and BLM Special Status species apply to Backcountry, Frontcountry, and Residential Management Zones.

The only known threatened or endangered plant species within the King Range is *Layia carnosa* (beach layia). This species is state and federally listed as endangered, and is restricted to the dune habitat in the vicinity of the mouth of the Mattole River. This alternative will maintain this occurrence of *Layia carnosa* in the Mattole Beach Dunes in accordance with the Recovery Plan for the Seven Coastal Plants and the Myrtle's Silverspot Butterfly (FWS 1998). The BLM will monitor the frequency and distribution of this population on an annual basis. Should the frequency of beach layia decline more than 30% between any two years, the BLM will initiate an appropriate management response. It will also continue on-going efforts to identify and remove invasive plant species such as *Ammophila arenaria* (European beachgrass), *Carpobrotus* ssp. (iceplant), and *Lupinus arboreus* (yellow bush lupine), if and when they occur.

In addition, all project proposals will be reviewed prior to implementation to determine if they would affect BLM Special Status species, and will incorporate project recommendations in accordance with the California Bureau Sensitive Species Policy (BLM Manual 6840) to prevent any actions that would contribute to the listing of these species under the ESA.

3.12.2.3 *Sudden Oak Death*

In order to reduce the threat of sudden oak death (*Phytophthora ramorum*) to the forested habitats of the King Range, BLM will work cooperatively with the U.S. Department of Agriculture and Humboldt County Agricultural Commission in addition to other applicable agencies to remain informed of current research related to the spread of this pathogen. Monitoring of species known to be susceptible to this pathogen will continue to be conducted on a semi-annual basis.

3.12.3 Alternative A

3.12.3.1 *Habitat*

The management objective for habitat under the no-action alternative is to carry forward general vegetation guidelines from current planning documents, particularly Section 2.52 of the Rangeland Health Standards and Guidelines for California and Northwestern Nevada Final EIS (BLM 1998b) for coastal scrub and grasslands. There currently are no management actions specified for individual habitat types.

3.12.3.2 *Invasive Plant Species*

The objective for this alternative is to implement and meet national BLM policies consistent with the Partners Against Weeds Initiative (USDI 1998) and Executive Order 13112.

The BLM will continue to initiate and maintain current, on-going efforts to map, monitor, and eradicate invasive plant species within the King Range. The BLM will remain an active and participating member of the Humboldt County Weed Management Area, and work with local landowners, community members, volunteers, and additional agencies to promote education about these species and encourage efforts that will aid in the prevention of invasive plant establishment. Removal of invasive plant species by manual means is the preferred method of eradication, and will be utilized wherever possible.

3.12.3.3 *Sudden Oak Death*

Appropriate literature consistent with the California Oak Mortality Taskforce will continue to be made available to educate the public about the spread of this disease.

3.12.4 Alternative B

3.12.4.1 *Habitat*

Coastal Dunes

Maintain a semi-stable dune system in the vicinity of the mouth of the Mattole River that will continue to promote a diverse assemblage of native plant species. This habitat would be managed to remain free of invasive plant species, which increase the stability of these sandy substrates and compromise the health of native species. The maintenance of this dune system would be accomplished by continuing to implement invasive plant eradication efforts.

Coastal Scrub

Maintain and encourage a productive and vigorous coastal scrub community that will produce an abundance of new foliage as forage for ungulates and other herbivores, allow for the establishment of decadent scrub communities as habitat for other species, and provide habitat for rare plant species known to occur in the vicinity of the King Range. No specific management prescriptions will be applied. Natural disturbance, such as wildfire, will be the sole agent of change for these scrub communities.

Grasslands

Maintain healthy, productive grasslands in accordance with Section 2.52 of the Rangeland Health Standards and Guidelines for California and Northwestern Nevada Final EIS (BLM 1998b) and to encourage native species abundance and diversity when feasible. The use of prescribed fire and the manual removal of encroaching tree species would be utilized to maintain the distribution and extent of these grasslands.

Chaparral

Maintain current levels of this important, fire-adapted plant community as a component of the diverse vegetation mosaic found within the King Range. Allow for natural disturbances such as wildfire necessary to maintain these fire-dependent habitats. Prescribed burns may be implemented in specific areas if it is determined necessary to implement specific management goals.

3.12.4.2 *Invasive Plant Species*

Same as Alternative A.

3.12.4.3 *Sudden Oak Death*

BLM will implement preventative and control measures consistent with guidelines developed by the USDA and Humboldt County Agricultural Commission. Appropriate signage and literature provided by the California Oak Mortality Taskforce will continue to be made available to educate the public about the spread of this disease.

3.12.5 Alternative C (Preferred)

3.12.5.1 *Habitat*

Coastal Dunes

Same as Alternative B, but with the addition of qualitative monitoring of recreational use throughout this plant community, which will be tracked over time to assess the trends of these habitats.

Coastal Scrub

Maintain and encourage a productive and vigorous coastal scrub community that will produce an abundance of new foliage as forage for ungulates and other herbivores, allow for the establishment of decadent scrub communities as habitat for other species, and provide habitat for rare plant species known to occur in the vicinity of the King Range. Prescribed burns will be utilized as necessary to mimic the pre-mechanization era fire regimes that helped to shape and maintain the distribution and extent of these different coastal scrub communities. Limited grazing outside allotment boundaries within the Frontcountry Zone will be allowed to help maintain and help increase vigor of coastal scrub communities on a project-by-project basis.

Grasslands

Maintain healthy, productive grasslands in accordance with Section 2.52 of the Rangeland Health Standards and Guidelines for California and Northwestern Nevada Final EIS (BLM 1998b) and to encourage native species abundance and diversity when feasible. Prescribed burns will be utilized as necessary to mimic the pre-mechanization era fire regimes that helped to shape and maintain the distribution and extent of these grasslands. Native grass enhancement projects will be pursued through an integrated approach including, but not limited to burning, grazing, re-seeding, and transplanting with locally collected seed stock. Limited grazing outside allotment boundaries within the Frontcountry Zone will be allowed for vegetation management purposes on a project-by-project basis.

Chaparral

Same as Alternative B.

3.12.5.2 *Invasive Plant Species*

Same as Alternative A, except that an Integrated Pest Management approach will be applied to all invasive non-native species infestations. The use of herbicides would be restricted to specific situations when all other alternatives are determined to be unfeasible and ineffective. Any proposed use of herbicides would be conservative, targeting specific weed individuals for a given species. Any herbicide use would be assessed using the National Environmental Policy Act (NEPA) process and would be made available for public comment.

3.12.5.3 *Sudden Oak Death*

This alternative has the additional objective to implement and meet national BLM policies consistent with the Partners Against Weeds Initiative (USDI 1998) and Executive Order 13112. To accomplish this, BLM will implement preventative and control measures consistent with guidelines developed by the USDA and Humboldt County Agricultural Commission. Appropriate signage and literature provided by the California Oak Mortality Taskforce will continue to be made available to educate the public about the spread of this disease. Additional preventative and control measures may be implemented, such as mandatory vehicle “dip” stations as developed by the BLM if found necessary to manage a potentially devastating infestation.

3.12.6 Alternative D

3.12.6.1 *Habitat*

Coastal Dunes

Same as Alternative C, but BLM would also develop further guidelines directing recreational use that could be implemented to meet habitat objectives.

Coastal Scrub

Same as Alternative C, with the addition that mechanical means as well as prescribed burns may be used to maintain this habitat type.

Grasslands

Same as Alternative C.

Chaparral

Same as Alternative B.

3.12.6.2 Invasive Plant Species

Same as Alternative C.

3.12.6.3 Sudden Oak Death

Same as Alternative C.

3.13 FOREST MANAGEMENT

3.13.1 Introduction

The desired goal of forest management in the King Range is to maintain and enhance a complex mosaic of various forest vegetation communities indicative of each successional stage and to protect existing stands with late successional or old-growth characteristics. This diverse and complex mosaic of forest vegetation will be represented with stands of all age classes and structural attributes. It will also provide a range of special forest products that serve both personal and commercial interests while maintaining existing and sustainable populations of vegetative species. The alternatives vary primarily on which tools will be available for achieving these goals, and where those tools may be applied.

3.13.2 Common to All Alternatives

3.13.2.1 Goals

Forest vegetation will be maintained and developed based on a historical perspective prior to the onset of logging with mechanical equipment, roughly after 1945. Data collected suggests managing for a forest vegetation distribution of approximately sixty percent late successional or old-growth stands, twenty percent mid-mature stands, and twenty percent early successional stands. Percent distributions of forest vegetation are based on data collected and analyzed in the Honeydew Creek Watershed Analysis (BLM 1996) and the King Range Late Successional Reserve Assessment (BLM 1998) and will be used as the reference condition.

3.13.2.2 Objectives

- The public lands within the King Range will be managed to maintain and develop stand characteristics that are a reflection of natural processes in forest vegetation development.
- Maintain undisturbed late successional forest habitat by keeping those stands intact and ensuring that the natural processes within these stands are left undisturbed.
- Accelerate second growth stands to achieve old growth or late successional stage characteristics. Silvicultural treatments will be used to treat previously harvested stand on public lands. The result of these restoration treatments will be an accelerated rate of succession among forest successional stages.
- Restore structural diversity of the second-growth stands and assist in developing a more enriched species composition of the second- growth stands.
- Reduce the size and frequency of large scale forest stand replacement fires.



Previously harvested stands need silvicultural treatments to promote stand diversity and reduce fire danger.

3.13.3 Alternative A

Silvicultural treatments will continue at the Bear Trap Plantation. Presently, 100 acres have been thinned and an additional 100 acres are scheduled for treatment.

Forest restoration activities are limited to tree planting following a large stand replacement fire and road decommissioning projects.

3.13.4 Alternative B

Salvage timber harvest operations would not be conducted after a stand replacement fire.

Silvicultural treatments to accelerate and enhance forest structure will be limited to the Bear Trap Plantation. No other silvicultural treatments will be conducted.

Tree planting will be limited to forest restoration following forest fires and on newly decommissioned roads.

3.13.5 Alternative C

Silvicultural treatments will be used to treat previously harvested stands to accelerate their development to late successional characteristics. Thinning of some forest stands is a desirable method of increasing the forest stand structural complexity and thereby developing old-growth or late successional characteristics. These treatments will involve stem-density management and tanoak control in sapling, pole, and early mature stands. Objectives to be incorporated into the prescription include reducing the stem densities to accelerate growth rates and succession into early-and mid-mature successional stages and create more diverse and healthy forest stand structures. Treatments will provide for the retention of snags and large woody debris for the development of stand structure and diversity.

The removal of timber will be restricted to specific projects where the thinning of stands to enhance stand structure will result in the production of small merchantable timber.

All silvicultural treatments will be designed to reduce the fuel loading within stands and aid in the prevention of stand replacement fires.

Tree planting will be done as part of forest restoration following a fire and the establishment of native forest vegetation on newly decommissioned roads. Only trees grown from native seed will be planted.

Following a stand replacement fire burned timber may be removed as part of a salvage effort and to aid in the restoration of the fire area. Burned timber will only be removed after careful environmental analysis and within specified standards and guidelines, see Appendix E. No new roads will be constructed and salvage will only occur where access is available. Helicopter logging may be used as a method to remove the timber. Salvage of timber will only occur in the Frontcountry and Residential Zones. No salvage operations will occur in the Backcountry Zone.

Silvicultural treatments will be performed by such means as cooperative agreements, partnerships, and contracts. Local communities will be given opportunities to participate in completing projects.

Silvicultural treatments will be prioritized based on their probability of success, the need of treatment and accessibility.

Conduct forest stand evaluations to identify stands in need of treatment to develop more diverse stand characteristics and accelerate their development to a late successional condition.

Silvicultural projects will not be conducted in the Backcountry Zone. Natural processes will be used to maintain the existing mosaic of forest vegetation. Forest restoration projects will be limited to previously harvested stands on public lands in the Frontcountry and Residential Zones.

The size of the treatment acreage will be limited by accessibility and achievement of goals such as the effectiveness of the treatment.

Treatment criteria will include the following:

- Forest site potential: the inherent ability of a site to rapidly develop stand structure and volume.
- Timing treatment with respect to stand development: effecting treatments at a most advantageous successional stage for maximizing stand development.
- Effectiveness/efficiency of treatment: the ability of an existing stand to advance in successional stages to meet objectives within reasonable cost.

Approximately 700 acres have been currently identified for potential treatment to enhance the development of a more diverse forest structure and accelerate the development of late successional forest stand characteristics. A detailed Late Successional Reserve Assessment for the King Range was completed in 1998 and recognized the need for forest treatment projects.

The following locations have been identified for treatment and are areas in need of silvicultural treatment and meet the criteria previously discussed (see Figure 3-6):

Nooning Creek and Finley Ridge

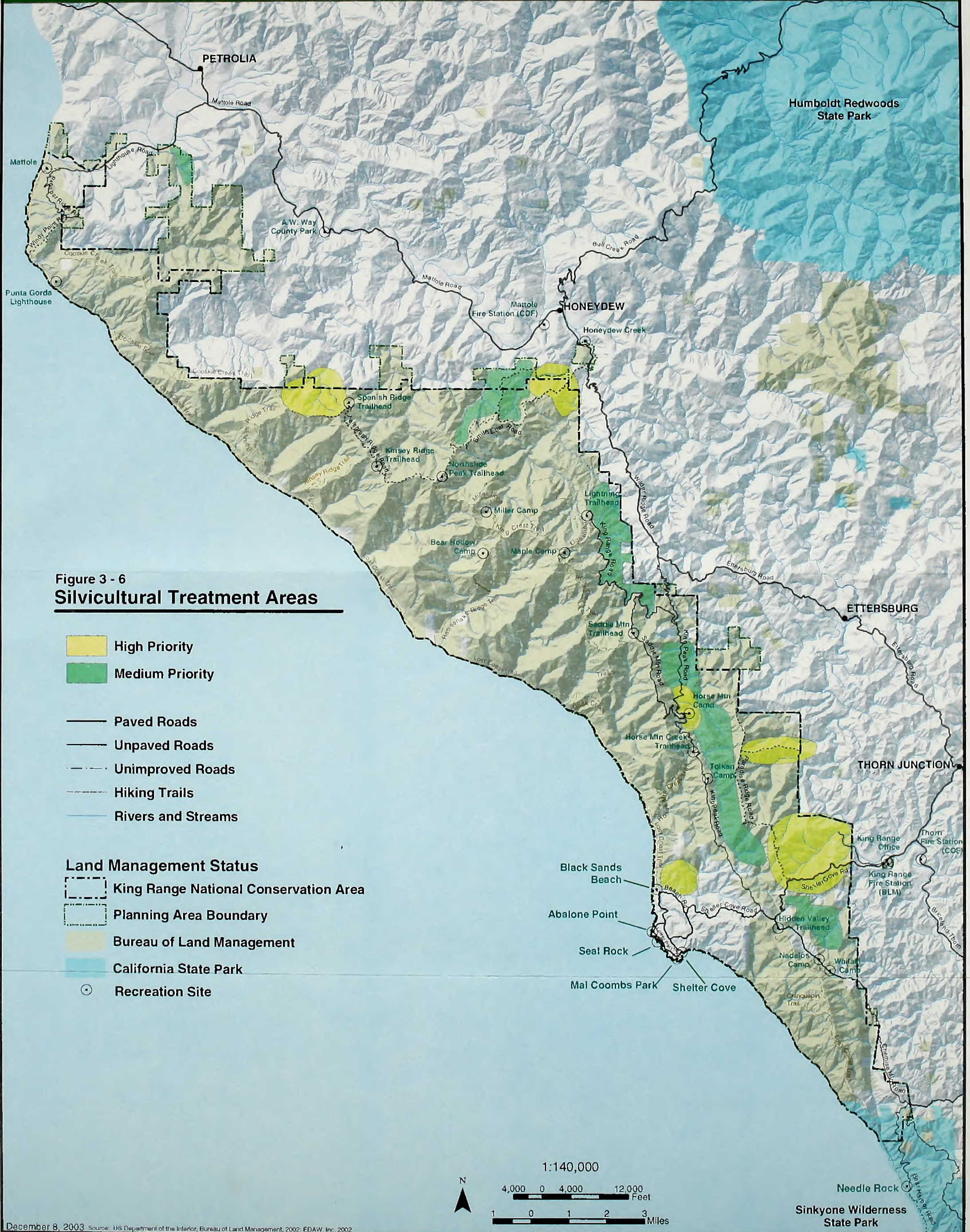
The Finley Creek Fire burned an estimated 13,000-17,000 acres and consumed the entire Nooning Creek drainage. Post-fire rehabilitation efforts included the planting of approximately 500,000 Douglas fir seedlings. The site is within the tanoak series and competition from tanoak is intense.

Treatment: Reduce the tanoak competition to release Douglas fir on approximately 300 acres. Reduction of fuel loading is a critical consideration in this drainage. Where tanoak slash will reach unacceptable levels, pile burning will be proposed. In other areas, single tree release or culturing of dominant conifers will be proposed. In some areas tanoak competition remains manageable in size and density. In these areas tanoak removal will be accomplished over a broader area. Approximately 200 trees per acre will be left with a high degree of variability in density and spacing conducive to providing diversity in the new stand.

Bear Trap Creek

Prior to acquisition into public ownership this tract of land was clear cut and repeatedly burned to maintain grazing lands. Following acquisition in 1985, approximately 125,000 Douglas fir seedlings were planted on a 200 acre site. These trees are exhibiting extremely high growth rates and the site is in need of thinning to develop structural diversity and accelerate the stand to late successional stand characteristics.

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Treatment: Reduce the Douglas fir stocking to approximately 70 trees per acre by means of thinning treatments over a certain period of time using random spacing as much as possible. Both conifers and hardwoods will be left to maintain species diversity. All native brush will be left uncut except in areas where brush interferes with getting the slash to the ground or pile burning is proposed. This site is lacking in the hard wood component and an effort will be made to encourage the development of hardwoods within this plantation.

Kaluna Cliff

This acquired parcel was part of the 1974 Finley Creek fire and was planted following acquisition into public ownership. Approximately 60,000 Douglas fir have been planted on this site and these trees are beginning to exhibit extremely high growth rates and will be in need for thinning within the next ten years. This action will be required to develop structural diversity and accelerate this stand to late successional conditions. Thinning of this plantation will also reduce the fuel loading and protect this stand and reduce the risk of an early replacement fire.

Treatment: Reduce the Douglas fir stocking and encourage the development of a diverse hardwood component. Thinning will be done to a variable spacing and will yield approximately 70 trees per acre after several entries into the plantation over a period of time. Approximately 100 acres will be thinned.

3.13.6 Alternative D (Preferred)

Same as Alternative C, with the following additions:

Salvage logging will be more intensively pursued, but only under circumstances where it contributes to primary goals of restoring forest ecological health. Old logging roads may be reopened and new temporary roads may be built to remove the burned or fire killed timber. Upon completion of the operation all temporary roads will be removed. The use of helicopters will be allowed in the removal of timber. Salvage operations will only be done in the Frontcountry and Residential Zones. No salvage will be allowed in the Backcountry Zone. Environmental concerns will be addressed and identified standards and guidelines as attached in this document will be followed.

All the proposed silvicultural projects will be brought forward in this plan. In addition forest restoration will also be conducted on some lands that were harvested prior to acquisition into public ownership. These lands were harvested in the late 1950s to early '70s and will need silvicultural treatments to accelerate their development into a more mature forest and a distribution based on a historical perspective prior to the onset of mechanical logging. Prior to implementation a detailed inventory will need to be completed to identify areas in need of treatment. The following is a more detailed description of project areas:

Previously Harvested Stands

A large percentage of the private land acquired in the King Range was previously harvested prior to acquisition into public ownership. Harvest prescriptions usually included clear cutting or "high-grading," the practice of taking all the largest commercial trees from the forest. These harvested sites received no follow-up treatment and became dominated with tanoak. On many sites a residual and a second-growth

Douglas fir component persists in varying densities across much of this landscape. These forested stands are now between 30 to 45 years old. The Douglas fir component is deficient in many areas, well spaced in other, distributed in clumps or thickets, or in some cases in extremely dense pole-sized stands of 10 - 100 acres.

Treatment: Prescription will include culturing of individual conifer trees in dense tanoak stands, culturing, and thinning in thickets and dense clumps and thinning in pole stands to provide variable spacing and selection of dominant trees. All treatments will be in units smaller than 40 acres with the objective of increasing stand diversity with variation in horizontal and vertical stand structure. Dense thickets are of high value to some wildlife species and will be preserved as an important element of stand diversity and will be maintained as a component of the landscape. This prescription will allow for the removal of some portion of the hardwood component and will present opportunities for fuel wood removal. Some of these stands will require the opening of old hauling and skid roads. Following the completion of the treatment, these roads will be properly decommissioned to prevent erosion and sediment entering into streams.

3.14 SPECIAL FOREST PRODUCTS

3.14.1 Introduction

Special forest products collected in the King Range include wild mushrooms, fuelwood, beargrass, and other vegetative products for floral trades. Many special forest products are also associated with strong cultural meanings or roles in local communities. The alternatives here offer a range of utilization levels for permitting personal and/or commercial collection, while assuring the sustainability of the habitats and ecological processes these species depend upon.

3.14.2 Common to All Alternatives

Provide special forest products to the public for both personal and commercial usage based on best biological and resource information. This will allow the BLM to provide special forest products to the public at levels that do not compromise the sustainability of these resources or the ecosystem processes that are associated with them.

3.14.3 Alternative A

Mushrooms

Collection permits are issued with a limitation of thirty commercial permits for mushrooms. The closing date for commercial mushroom collection is the last day of the calendar year. Personal collection permits have a five-pound limit per day, and no seasonal restrictions.

Beargrass

Issue cultural use permits for collection of beargrass.

Floral Trade Species

Issue Special Use Permits for collection of plants used in floral trade, such as huckleberry and salal.

Fuel Wood

Cutting permits are issued on case-by-case following a wind storm to help clear roads.

3.14.4 Alternative B

Special forest products permits will only be issued for personal usage. No commercial permits will be issued. Permits will be restricted to the Frontcountry and Residential Zone. Seasonal restrictions will be implemented and amounts of material collected will be limited. Permits may also be limited to certain locations.

3.14.5 Alternative C (Preferred)

Special forest product permits will be issued for a variety of forest resources for personal collection and commercial harvesting throughout the KRNCA. Permits may be issued for such vegetative resources as but no limited to: beargrass, huckleberry, salal, mushrooms, and fuelwood. Permits may be restricted as to amount, location of collection and length of time. Additional stipulations will be identified on the permits for resource protection. The number of permits that will be issued will depend on environmental concerns and limited biological resources.

Mushrooms

A seasonal restriction for commercial mushroom collection will be established. The proposed closing date is the end of the last day in the year. No seasonal restriction will be placed on personal permits. The number of permits issued each year will depend on the availability of the resource and the ability to maintain existing and sustainable populations. Monitor mushroom collection methods to prohibit destructive techniques, and encourage cooperative studies and monitoring programs.

Beargrass

Issue cultural use permits for collection of beargrass. Coordinate with local tribes to increase awareness and education regarding cultural use of beargrass. Implement active management efforts, such as localized prescribed burns, in a designated “Native American Beargrass Collection Unit” to encourage this species.

Floral Trade Species

Issue Special Use Permits for collection of plants used in floral trade, such as huckleberry and salal.

Fuel Wood

All fuel wood permits will be issued on a site-specific basis. Both personal and commercial use permits will be issued. The fuel wood areas will be made available as a result of either forest treatment or fuel

reduction projects designed to accelerate late successional characteristics. No fuel wood permits will be issued for the Backcountry Zone or the Mattole Estuary.

3.14.6 Alternative D

Same as Alternative C.

3.15 GRAZING MANAGEMENT

3.15.1 Introduction

In the northwestern corner of the King Range, livestock grazing contributed to the management of open grasslands above the coastline. The KRNCA currently has four active grazing leases, with associated allotments, representing a total of 2,050 AUMs. There are also several outstanding administrative issues that need to be addressed, redefining the boundary of one allotment to improve rangeland health, and administratively making four unused allotments permanently unavailable for grazing, with no change in the number of AUMs authorized. Alternative B also considers the option of making all rangelands in the KRNCA unavailable to livestock grazing.

3.15.2 Alternative A

Same as Alternative C.

3.15.3 Alternative B

Designate all rangelands as unavailable to livestock grazing in the King Range.

3.15.4 Alternative C (Preferred)

Maintain existing four active grazing leases and associated grazing allotments, representing a total of 2,050 AUMs.

Administratively redefine Spanish Flat grazing boundary to exclude the terraced prairie between and including Spanish and Randal Creeks in order to protect significant cultural sites and to reduce conflicts with recreation visitors. Portion to make unavailable to livestock grazing is approximately 500 acres of perched prairie shelf including and between Randall Creek and the southern-most allotment boundary; no AUMS lost as use has been shifted to other areas of the allotment. This change is needed to resolve rangeland health and resource use conflicts: This action will benefit cultural resource protection, and to a lesser extent, anadromous fisheries protection and water quality protection for back country users (see Figure 3-7).

Administratively change land use allocations for four expired leases from available to unavailable to livestock grazing:

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- **Bear Trap Allotment:** 654 acres, 400 AUMs, lease cancelled since 1995; allotment was an old clear cut that has since been planted and has redeveloped back to forest. It does not consist of suitable grazing lands and was only grazed for two seasons in 1985-86.
- **Etter Lease:** 40 acres; 8 AUMs, limited grasslands have converted to forest type, lease expired and cancelled 1996. This parcel is currently being exchanged with the landowner (previous lessee).
- **Jewett Ridge Allotment:** 80 acres, 13 AUMs, lease cancelled since 1996. Allotment has no suitable grassland on it. It historically was a clear cut adjacent to a private landowner who wished to graze it while the grasses were available. The area has returned to a productive forest and is no longer capable of accommodating livestock production.
- **Big Flat Allotment:** 2,285 acres, 60 AUMs, lease never grazed at lessee annual request; lease expired 1995. Area is unsuitable for livestock grazing due to cultural and soil resource protection needs, recreation and visual incompatibilities and access logistics.

Rationale for Making Big Flat Unavailable for Grazing

Protection of archaeological and cultural resources in the Big Flat grazing allotment is not compatible with livestock grazing. Several large cultural sites exist in the transition zone from beach to prairie. It has been demonstrated on the Spanish Flat grazing allotment to the north that livestock grazing on a coastal terrace prairie, with its fragile soil-vegetation surface integrity, can not occur without extensively damaging the sites, unless the sites are completely fenced and regularly maintained.

The soils are not suitable for livestock grazing. Grasses grow on a mosaic of semi-stabilized sand and sandy-loam. The coastal terrace prairie soils are developed primarily as a result of repeated seismic events which have uplifted near-shore marine deposits (intertidal beach sands and gravel deposits). These uplifted terraces are fairly young as they have been carbon-dated at about 3,000 years old in the area north of Spanish Flat (Lajoie et al. 1982) and have not had enough geologic time to form real soil horizons. The erodability of these soils is very high when grass cover is removed, as the soil profile lacks adhesive clay particles and it is extremely thin, in the neighborhood of a few centimeters at best. Once the thin sandy-loam surface is disturbed, susceptibility to wind erosion is extremely high as loamy-sand and sand are the remaining constituents below.

Any active grazing on Big Flat would require extensive new fencing. New fences would have to be constructed around a) the several large cultural sites for protection and mitigation, b) the air strip; to prevent damage to the air strip, incoming and outgoing airplanes, and livestock, and c) the private parcels to prevent trespass. In all, about three miles of fencing would have to be built in the most coveted destination point along the Lost Coast trail. Access logistics and economics alone make these fences infeasible. Further, construction of new fences in the primitive zone of the wilderness study area is not compatible with the management goals and objectives for this area.

Big Flat is a very inaccessible location within the Backcountry Zone. Vehicle transport to the bottom of the Smith-Etter Road would be difficult, and likely impassable during wet times of year. Then, to get stock to Big Flat, livestock would have to be driven four miles south down the beach. Practical grazing compliance monitoring and range improvement maintenance by both the operator and BLM staff would be difficult to achieve.

3.15.5 Alternative D

Same as Alternative C.

3.16 FIRE MANAGEMENT

3.16.1 Introduction

Throughout history, fire has been one of the primary forces affecting the King Range landscape, creating and maintaining a mosaic pattern of fire-adapted ecosystems such as grasslands and chaparral. The plan alternatives seek to find a range of balances between managing for the natural dynamics of fire effects across the landscape and protecting property and resources from damage both within and adjacent to the KRNCA. These alternatives outline a continuum of responses to wildfires (both natural and human caused) and approaches to fuels management.

Note that the term “Appropriate Management Response” as used in this section has specific meaning regarding fire planning/management. It is defined as “Specific action taken in response to a wildland fire to implement protection and fire use objectives.” In other words, the “appropriate management response” is determined by the specific goals and objectives outlined in this RMP and King Range Fire Management Plan.

The conditions associated with individual fires and the resulting tactics employed to manage those fires are too numerous to document in this plan; the appropriate response to a specific situation must take these conditions into account along with area fire use objectives.

3.16.2 Common to All Alternatives

3.16.2.1 *Goals and Objectives*

The goals and objectives common for all alternatives are to reduce the wildfire risk to life, resources, and property. Protection of human life (firefighter and public safety) is the highest priority during the occurrence of any wildland fire. Reduce the damaging effects of fire suppression activities on natural and cultural resources. Develop a landscape resistant to damage associated with large scale, high intensity fires by allowing for the natural dynamic effects of fire to occur on the ecosystem.

3.16.2.2 *Management Actions*

Permits shall be required for all campfires outside of developed campgrounds year round. Campfires will be permitted only in developed campsites during high wildfire potential periods. Consideration may be given to allowing fires in certain specific locations outside of developed campgrounds (e.g., beach) at the discretion of the authorized officer.

Conduct wildfire prevention and education programs in conjunction with California Department of Forestry and Fire Protection (CDF).

Limit the use of mechanized equipment within Wilderness Study Areas (WSA), additional lands found to possess wilderness character, and Areas of Critical Environmental Concern (ACEC).

Perform burned area rehabilitation to mitigate damages associated with wildfires.

Complete and maintain the shaded fuelbreak system that separates the Frontcountry and Residential Zones from the Backcountry Zone. Shaded fuel breaks involve the removal of brush, lower tree branches, and other fuels that can carry a fire, while leaving larger trees to provide a shade canopy. This type of fuel break is very effective while causing a minimal level of resource impacts and visual intrusion. The main fuel break system runs east from Kaluna Cliff to the King Peak Road, and continues north to the Horse Creek Trailhead and up the ridgeline to Horse Mountain. It then follows the ridgeline north to the Buck Creek Trailhead and down to the King Range Road. From the north end of King Range Road the fuel break goes down Bear Wallow Ridge to Honeydew Creek and up to the Smith-Etter Road. Finally, it runs parallel to the Smith-Etter Road along the ridgeline to the west, terminating at the North Slide Peak Trailhead.

The 2003 Honeydew Fire required an extensive suppression effort to protect life and property on private lands and in communities surrounding the KRNCA. This required tactics such as construction of new dozer lines and reopening of existing dozer lines, including several miles of line within the King Range Wilderness Study Area.

To improve protection of surrounding communities and private lands, and to lessen the need for future dozer lines and their associated impacts, the shaded fuel break system would be expanded under all alternatives to augment the existing system discussed above. Additional locations currently planned include the 2003 dozer line on Fire Hill (From the King Crest Trail to a slide above the beach), Paradise Ridge and Finley Ridge. Other locations may be added to meet the objectives of the area fire management plan (under development), as long as they meet the objectives of this RMP.

In summary, expansion of the shaded fuel break, although they cause some modest impacts to naturalness, would reduce impacts to the area's naturalness in the long-term by providing defensible containment perimeters for fire, thus reducing the need for dozer line construction. Having several defensible fuel breaks will also increase the BLM's capability for reestablishment of the natural role of fire in the backcountry zone.

3.16.3 Alternative A

3.16.3.1 All Zones

Under this alternative all wildfires, regardless of cause, would be suppressed to protect human life and property and natural/cultural resources both within and adjacent to agency administered lands. Fire suppression activities shall be commensurate with values at risk and potential long-term damages associated with the suppression efforts. Detailed instructions for fire suppression responses and restrictions are contained in the King Range Fire Management Plan (BLM 1992b).

Use broadcast burning to achieve resource management goals on a case-by-case basis. No broadcast burning will be used for hazardous fuels reduction purposes. Pile burning may be used for removal of cut fuels within the fuelbreak system.

3.16.4 Alternative B

3.16.4.1 *All Zones*

Under this alternative broadcast burning will not be used to achieve any resource management goals. Pile burning may be used for removal of cut fuels within the fuelbreak system. Update 1992 King Range Fire Management plan to reflect current conditions as set forth in this alternative.

3.16.4.2 *Backcountry and Frontcountry Zones*

Re-establish the natural role of fire in the Backcountry and Frontcountry Zones by allowing naturally ignited fires to burn. Manage fuels to allow variable intensity wildfires to create a landscape resistant to damages associated with large, high intensity fires, yet provide for the natural, dynamic effects of fire to occur on the ecosystem. All human caused fires will be suppressed. Take suppression actions on any natural fire that may threaten private property. In all suppression situations, minimize direct attack. Use bucket drops and retardant to cool hotspots and slow the rate of spread if deemed appropriate. Assess direct attack needs on a case-by-case basis for wildfires that occur during extreme fire conditions.

Apply Appropriate Management Response suppression efforts to the extent it poses no wildfire risk to adjacent private property. Fires may be allowed to burn within broad containment areas defined to enhance the natural character of the KRNCA and when current and expected fire behavior conditions will not result in developing adverse impacts. Implementation of this strategy is dependent on communication between resource advisors, BLM, and CDF suppression agencies during the incident and continuous monitoring and assessment of the immediate fire situation is required. Detailed instructions for fire suppression responses and restrictions are contained in the King Range Fire Management Plan (BLM 1992b).

3.16.4.3 *Residential Zone*

Protect human life and property and natural/cultural resources both within and adjacent to agency administered lands. Suppress all wildfires, regardless of cause. Fire suppression activities shall be commensurate with values at risk and potential long-term damages associated with these efforts. The strategic use of Appropriate Management Response will not be applicable in this zone. Fuels are managed to create conditions that result in low intensity wildfires and reduced fire spread potential within this zone.

3.16.5 Alternative C (Preferred)

3.16.5.1 *All Zones*

Under this alternative, use prescribed fire activities (combinations of broadcast and pile burn) to improve forest health and increase unique habitat improvement (such as disease control, exotic species eradication, coastal prairie maintenance, etc.). Augment the fuelbreak system by using broadcast burning to increase the reduction of fuels adjacent to the system. Update 1992 King Range Fire Management Plan to reflect conditions as set forth under this alternative.

3.16.5.2 *Backcountry Zone*

Re-establish the natural role of fire in the Backcountry Zone by allowing naturally ignited fires to burn. Manage fuels to allow variable intensity wildfires to create a landscape resistant to damages associated with large, high intensity fires, yet provide for the natural, dynamic effects of fire to occur on the ecosystem. Maintain this natural role of fire in the Backcountry Zone through the use of prescribed fire and allowing naturally ignited fires to burn. All human caused fires will be suppressed.

Initiate suppression actions on natural fires that may threaten private property. In all suppression situations, minimize direct attack. Use bucket drops and retardant to cool hotspots and slow the rate of spread if deemed appropriate. Assess direct attack needs on a case-by-case basis for wildfires, which occur during extreme fire conditions.

Manage fuels for variable intensity wildfires to create a landscape resistant to damages associated with large, high intensity fires, yet allow for the natural, dynamic effects of fire on the ecosystem. Suppress natural fires when BLM and CDF agree the fires may threaten private property. In all situations, minimize direct attack. Use bucket drops and retardant to cool hotspots and slow the rate of spread if deemed appropriate. Assess direct attack needs on a case-by-case basis for wildfires that occur during extreme fire conditions.

Practice Appropriate Management Response within the Backcountry Zone to the extent it remains safe for fire suppression forces and does not pose a risk to adjacent private property. Fires may be allowed to burn within broad containment areas if it is determined by BLM, in conjunction with the CDF that current and expected fire behavior will not have adverse impacts and will enhance the natural character of the KRNCA. Implementation of this strategy is dependent on communication between resource advisors and the fire suppression agency during the incident. A continuous process of monitoring and assessment of the immediate fire situation is required.

3.16.5.3 *Frontcountry and Residential Zones*

All wildfires, regardless of cause, within the Residential and Frontcountry Zones will be suppressed to protect human life and property and natural/cultural resources both within and adjacent to agency administered lands. Fire suppression activities shall be commensurate with values at risk and potential long-term damages associated with the efforts.

Utilize prescribed fire and mechanical fuel reduction methods in managing fuels to create conditions resulting in low intensity wildfires and to reduce fire-spread potential and damages associated with large, high intensity fires. Update 1992 King Range Fire Management Plan to reflect current conditions as set forth in this alternative.



Winter burning of brush removed from the Saddle Mountain shaded fuel break.

Explore opportunities for stewardship contracts with local interests for thinning, biomass removal/utilization, and firewood cutting provided such projects meet the goals of hazardous fuels reduction and vegetative management. These stewardship contracts could include, for example, opportunities for residents to reduce hazardous fuels on public lands adjoining their private properties.

3.16.6 Alternative D

3.16.6.1 All Zones

Under this alternative all wildfires, regardless of cause, will be suppressed to provide maximum protection of human life, property and natural/cultural resources both within and adjacent to agency administered lands. Fire suppression activities shall be commensurate with values at risk and potential long-term damages associated with the efforts. Suppression operations will be conducted under conditions that are safe for fire suppression forces.

Utilize prescribed fire and mechanical fuel reduction methods in managing fuels to create conditions resulting in low intensity wildfires and to reduce fire-spread potential and damages associated with large, high intensity fires. Augment the fuelbreak system by using broadcast burning to increase the reduction of fuels adjacent to the system. Extend the fuelbreak system in potentially opportunistic areas such as Paradise and Finley Ridges. Update 1992 King Range Fire Management Plan to reflect current conditions as set forth in this alternative.

3.16.6.2 *Frontcountry and Residential Zones*

Explore opportunities for stewardship contracts with local interests for thinning, biomass removal, and utilization, and firewood cutting provided such projects meet the goals of hazardous fuels reduction and vegetative management. These stewardship contracts could include opportunities for residents to reduce hazardous fuels on public lands adjoining their private properties.

3.17 TRANSPORTATION AND ACCESS

3.17.1 Introduction

The purpose of the transportation program is to provide a network of roads for public and administrative access while minimizing impacts on natural and cultural resources in the area. These roads are designed and managed to blend with the primitive character of the KRNCA, and to allow for a diversity of uses and experiences. Restrictions on use are sometimes needed to ensure safety or to protect resources from degradation due to excessive erosion. The alternatives propose a range of degrees of access by varying the designation of specific roads according to type of vehicles and seasons of use allowed. The more active management approaches also consider some road improvement projects to allow greater access than is currently available.

3.17.1.1 *Background on Travel Management Program and Off Highway Vehicle Designations*

All public lands in the planning area are designated through the land use planning process as either open, limited, or closed to vehicle travel under the BLM Off Highway Vehicle (OHV) Regulations (43 CFR Subpart 8342—Designation of Areas and Trails). Under this system, in an “Open Area,” all vehicle types are allowed to access all parts of an area (including cross-country travel) at all times. In a “Limited Area” vehicle use is allowed only during certain times of year, by certain types of vehicles, or in certain parts of the area such as designated roads and trails.

In the King Range, all public vehicle routes are in the Frontcountry and Residential Zones, and vehicle use is limited to designated roads and trails. Additional limitations for vehicle type and time are outlined below for each route. These designations only apply to BLM managed roads and trails, and not to County roads. Note that:

- Any areas and routes on public lands within the planning area that are not identified explicitly in this plan are closed to public vehicle use. Routes designed for passenger car access to and within campgrounds, trailhead parking areas and other BLM Recreation Sites, although they are not identified explicitly, are open to vehicles unless signed, gated, or otherwise closed.
- Certain routes are designated as limited to 4-wheel drive (4WD) vehicles. This designation indicates that the routes have steep or irregular surfaces and are not maintained for passenger car access. These designations are for planning purposes, and visitors should inquire locally as to current conditions of routes.

3.17.2 Common to All Alternatives

3.17.2.1 *Goal*

Provide a network of roads for public and administrative access that complement the rural character of the KRNCA and surrounding Lost Coast region, and have minimal impacts on the resource conditions.

3.17.2.2 *Objectives*

1. Provide administrative, fire and emergency access for management and protection of the area visitors, resources, and facilities.
2. Provide public access to trailheads, campgrounds, and other BLM managed lands and facilities.
3. Fulfill legal access requirements to private landowners and other right-of-way holders and land use permittees. (Specific access issues regarding private landowners are beyond the scope of this plan and will be addressed on an individual basis with each landowner).
4. Provide visitors with opportunities to experience diverse scenic and recreational resources along a variety of driving routes ranging from passenger car to 4-WD vehicle.
5. Minimize impacts to water quality and other resource condition objectives through proper design and maintenance of roads.
6. Recognize that county roads provide the primary access to/through much of the King Range. Coordinate with and assist Humboldt County in ensuring that the county road system complements King Range resource protection and public access needs.
7. Manage the western coastal slope, or Backcountry Zone of the King Range as a non-motorized use area.

3.17.3 Actions/Designations Common to all Alternatives

3.17.3.1 *Year-Round Access for All Vehicle Types*

The following roads have a limited designation, and would be open year-round to all vehicle types:

1. Prosper Ridge Road

- From Lighthouse Road to private property boundary just beyond intersection with Windy Point Road (approximately 2.2 miles)

This road provides access to several scenic vista points, a paragliding launch site, and numerous private year-round residences.

2. Nooning Creek Road

- From Shelter Cove Road to end (approximately 2.0 miles)

This road provides access to numerous private year-round residences and to public lands along Nooning Creek.

3. King Range Road

- From King Peak Road to end (approximately 6.6 miles)

This road provides access to the popular Lightning Trailhead. The road beyond the trailhead was restored to a natural appearing landscape several years ago because of major road failures, landslides, and potential for adverse resource impacts. This road also serves as a major firebreak connector between Saddle Mountain Ridge and Bearwallow Ridge.

3.17.3.2 Year-Round Access for 4-WD Vehicles

The following road has a limited designation, and would be open year-round to 4-WD vehicles:

4. Finley Ridge Road

- From Paradise Ridge Road to BLM land boundary (approximately 1.5 miles)

This road provides access to private property and undeveloped public lands along Paradise Ridge.

3.17.4 Roads that Vary by Alternative

Note that Alternative C is the Preferred Alternative for all roads (see Figure 3-8).

5. Smith-Etter Road

- Wilder Ridge Road to its intersection with Telegraph Ridge Road (approximately 10.2 miles)

Alternative A, B, and C

- Limited seasonally from April 1 to October 31. Vehicle Type: 4-WD.

This road provides access to the Kinsey Ridge, North Slide Peak, and Spanish Ridge trailheads and is also used by hunters, special forest product collectors, and as a scenic backcountry driving route. It also provides access to private property. Portions of the road serve as a major firebreak. During the winter, severe storms with strong winds and high rainfall (and snowfall at the highest elevations) make it impractical to keep the road open. Vehicle use during the winter would also cause sedimentation and road damage to the lower section of the road without drainage and surface improvements.

Alternative D

- Limited seasonally from April 1 to December 31. Open to all vehicle types.

Extend the fall use season by two months until December 31 (weather permitting) to allow for public access during the commercial mushroom harvesting and small game hunting seasons. Also, improve the road surface to allow for access by low-clearance vehicles. The use season extension would require improving the road base to prevent wet-weather resource damage in the lower segment of the route.

6. Johnny Jack Ridge Road

- Public land boundary to trailhead parking area near intersection with Cooskie Creek Trail (1.5 miles (+/-), mileage to be determined based on easement and trailhead location).

Alternatives A, B, and C

- Not available (closed) due to lack of legal public access.

Alternative D

- Limited (contingent on BLM securing the necessary public access easements) seasonally from April 1 to October 31. Vehicle type: 4-WD.

Would allow for access into the coastal uplands in the Cooskie Peak Area. This route accesses the northeast portion of the KRNCA, but there is currently no legal public access through the private lands between the county road and BLM land boundary. The route would be opened to a trailhead parking area constructed near its intersection with the Cooskie Creek Trail, contingent upon acquisition of easements from willing sellers.

7. Windy Point Road

- From intersection with Prosper Ridge Road to private property boundary (approximately 1.6 miles)

The road provides close access to Punta Gorda Lighthouse, a popular abalone diving area, and offers scenic vistas of the coastline. It also provides access to private property. During the winter rains, vehicle use would cause significant resource damage without substantial road upgrades.

Alternatives A and C

- Limited seasonally from April 1 to October 31 (season of use can vary based on rainfall/ soil conditions). Vehicle Type: 4-WD.

Would allow public access during the peak use months including the summer tourist season, abalone and deer season.

Alternative B

- Closed.

King Range National Conservation Area



The Windy Point Road is surrounded by open coastal prairie with no natural barriers to cross-country vehicle travel. Closure would eliminate resource impacts from illegal cross-country vehicle travel.

Alternative D

- Limited. Vehicle type: 4-WD.

This alternative would keep the Windy Point Road open year-round. This would require upgrading the road to allow for use during the wet season (providing a gravel base). The character of the driving experience would change from a two-track 4-WD trail to a gravel roadway.

8. Telegraph Ridge Road

- Intersection with Smith-Etter Road to the gate on Lake Ridge (approximately 3.2 miles).

Alternatives A and C

- Limited seasonally from April 1 to October 31. Vehicle Type: 4-WD.

This road extends from the Smith-Etter Road (seasonal use) and provides public access to several trails. It allows hunters closer vehicle access to popular hunting areas at the north end of the King Range. During the winter, severe storms combined with high rainfall and snow makes it impractical to keep open during the rainy season. Vehicle use on this road during the winter would be potentially unsafe and would greatly increase maintenance costs.

Alternative B

- Closed.

Under this alternative, The Telegraph Ridge Road would be closed and decommissioned (removed), leaving a route for a hiking/equestrian trail. This would increase the natural character of the King Range Wilderness Study Area.

Alternative D

- Limited seasonally from April 1 to December 31. No vehicle restrictions to Spanish Ridge Trailhead (2.3 miles). Remaining 0.9 miles 4-WD only.

This alternative would require improvements in the road to allow for access by low clearance vehicles. It would allow passenger car travelers to access the Spanish Ridge Trailhead. It would change the driving experience, except for the last 0.9 miles which would remain a 4-WD trail.

9. Etter Road

- From Smith-Etter Road to BLM land boundary (approximately 1.9 miles)

Alternative A and B

- Closed.

This route is currently closed to the public since it was not designated explicitly in the Transportation Plan. Under Alternative B it would be closed to the general public, but would not be decommissioned. Access would continue to be available for CDF emergency services vehicles and private landowners with access rights-of-way.

Alternative C

- Limited seasonally from April 1 to October 31. Vehicle Type: 4-WD.

This route receives low public use but provides easier and more rapid emergency access for fire suppression (through private property). The access season must coincide with the Smith-Etter Road which provides public access.

Alternative D

- Limited seasonally from April 1 to December 31. Open to all vehicle types.

Would allow for additional access during the mushroom and small game hunting seasons, coinciding with the extension of the Smith-Etter Road opening.

10. Paradise Ridge Road

- Shelter Cove Road to end (approximately 9.0 miles)

Alternative A, B, and C

- Limited. Vehicle type: 4-WD.

This road is located on a ridgeline where soil erosion is minimal. It provides access to private property. Numerous hunters and other vehicle-oriented recreation users enjoy traveling this road for a backcountry riding experience. The road also serves as a major firebreak.

Alternative D

- First 1.5 miles (approx.) with no vehicle limitations, remainder limited by vehicle type: 4-WD.

Improving the first 1.5 miles for low-clearance vehicles would allow a larger number of visitors to access several outstanding vista points of the Lost Coast and inland mountains.

11. Saddle Mountain Road

- Intersection with King Peak Road to intersection with King Range Road (approximately 5.4 Miles)

This road provides access to the Saddle Mountain trailhead. Most of the road traverses a ridgeline where soil erosion is minimal during the rainy season. Numerous scenic vistas of the coastline offer visitors with a high quality vehicle touring experience. The vistas here are similar to the King Crest trail system. Most of the road corridor serves as a major shaded fuel break.

Alternatives A, B, and C

- Limited. Vehicle type: 4-WD.

Alternative D

- Unlimited, with no vehicle or seasonal limitations.

Upgrade of road would allow visitors with low-clearance vehicles to access a spectacular scenic coastal mountain drive.

12. Mattole Estuary Road and Spur

- Approximately 2 miles

This road and a number of unmaintained spurs provide access into the gravel bars in the Mattole Estuary area. The main road also fords the river to private property on the north side (landowner has an easement). The gravel bars are accessed for a variety of uses, including fishing, hunting, hiking, overnight camping, and wildlife viewing. Parts of the estuary contain riparian vegetation and woody debris critical to the anadromous fishery and other wildlife values. Local fishery restoration groups have focused considerable attention on monitoring and improving habitat in the area and are concerned about impacts from unmanaged vehicle use, as well as firewood cutting, escaped campfires, etc. The portion of the estuary below mean high water line was outside of BLM's management jurisdiction. However, the BLM recently obtained a permit from the State Lands Commission to manage vehicle use on these lands.

Alternative A

- Open to OHV use below Mean High Water mark.

Alternative B

- Closed.

This is the most protective designation for riparian and fishery values, but would eliminate vehicle access to a popular local outdoor recreation access point.

Alternative C

- Open the main access road plus two designated routes totaling approximately two miles.

This alternative would allow limited vehicle access and use of two designated routes that do not impact the riparian vegetation.

Alternative D

- Open the main access road plus all existing routes that do not impact fishery and riparian resources (mileage unknown/variable depending on water levels).

This alternative would provide the most freedom for vehicle access. However, it would be difficult to enforce.

3.18 RECREATION

3.18.1.1 *Introduction*

Recreation management represents one of the major challenges in the King Range, as the very qualities of pristine wilderness and remote coastal access can be degraded if too many people decide to visit at the same time. There is a strong consensus among user groups that protecting the KRNCA's unique character is a priority, yet increasing numbers of people are visiting the area seeking a wide variety of activities and experiences. The plan alternatives consider a broad spectrum of recreation management possibilities, from facilities development to signage and permitting systems to balance access levels with opportunities for visitors to find solitude and the wilderness-type recreation experience for which the King Range is best known. As a result, the three management zones are planned for different types and levels of recreation use, so as to direct users to the parts of the KRNCA most appropriate for their interests and activities.

3.18.2 Common to All Alternatives

Provide adequate maps and visitor information. Stress compliance with coastal "Leave No Trace" principles including a strict "pack it in, pack it out" requirement, proper food storage, fire prevention, and sanitation techniques.

Provide adequate and timely maintenance of all facilities, roads, trails, and signs.

Provide supplementary rules and regulations, where required, to protect resources, visitor safety, and the community surrounding the King Range. Such rules may include provisions such as campfire prohibitions during times of extreme fire danger, requiring use of bear proof food storage canisters in the backcountry, disallowing boats landing on beach, requiring weed free feed for livestock use within the KRNCA, etc.

Evaluate all applications for special recreation permits on a case-by-case basis. Approve only those requests that are consistent with the goals of the proposed KRNCA use zones.

Encourage and promote cooperative management efforts with local groups, communities, and interested individuals. Promote volunteerism.

Construct fences or barriers where needed to control unauthorized visitation or use from public land onto private land. Install effective barriers to preclude vehicle use within designated closed areas.

Enforce existing regulations and apply other regulations, if necessary, to address visitor safety or resource protection issues as they arise.

Ensure that Universal Accessibility Standards are met for all new developed facilities and, where feasible, the retrofitting of existing facilities.

3.18.3 Alternative A

3.18.3.1 Alternative A: Backcountry Zone

Management Goal

Continue management of the Backcountry Zone under the goals of the King Range Visitor Services Plan Objectives.

Objectives

Physical Setting/Facilities

Maintain a naturally appearing landscape, with the sights, sounds, and forces of nature being the predominant physical features and sensations that visitors experience. The works and impacts of humans are minimal in extent and transitory in nature.

Maintain the existing network of backcountry trails, directional signing, and minimal facilities. No other facilities will be allowed.

Social Setting

Provide for levels of use that meet public demand and allow freedom of access while managing to provide opportunities for solitude and quality primitive recreation through existing permit system for all organized groups.

Visitors are expected to practice a level of personal responsibility and self-sufficiency commensurate with a self-directed backcountry experience.

Management Presence

The majority of management actions will occur off-site so that visitors can experience freedom to choose travel and camping locations once they enter the backcountry. Management actions will prepare visitors to enter and use the backcountry safely and with minimal impacts to resources and other visitors.

Management presence on-site is subtle, with moderate levels of direct visitor contact by BLM backcountry ranger and intermittent patrols by law enforcement rangers.

Allowable Uses

Non motorized recreation activities including hiking, backpacking, surfing, surf fishing, equestrian use, camping, environmental education, wildlife viewing, and other activities consistent with the goal of emphasizing backcountry experiences. Allow for both commercial and non-commercial non-motorized recreational use, if consistent with zone objectives, through established permitting procedures.

Management Actions

Actions proposed to achieve zone management objectives include permit systems for organized groups, maintaining a trail system and minimal facilities, signing and interpretive information, and visitor use and resource monitoring.

Use Allocation

Under the No Action alternative, the existing group permitting system will be continued. No permit system or use allocation limits will be imposed on private parties. All organized groups, both commercial and non-commercial, will require permits and the following rules will continue to apply:

- Maximum group size of fifteen “heartbeats,” meaning combined people and livestock for the Lost Coast and no more than ten on the upland trails. The upland trail group size maximum of ten does not apply if upland trails are used to access the beach without being used for overnight camping.
- No more than two organized groups (maximum of 25 people total) may leave per day from any trailhead.
- Groups having more than fifteen people must break into two groups, may not leave any given trailhead within two hours apart, and may not camp within a half-mile of each other.
- Commercial groups are not allowed to run trips in the King Range during Memorial Day and Fourth of July weekends.

Facility Development

Existing backcountry facilities will be maintained. No new facilities will be developed within the Backcountry Zone. Actions include the following:

1. Maintain upland backcountry campsites including Maple Camp, Bear Hollow Camp, Miller Camp, and Chinquapin Camp at existing primitive levels. Maintain major campsites along the Lost Coast to primitive aesthetic standards including actions such as litter removal, obliteration

of unsightly, unnecessary, or unsafe fire rings, reduction of sanitation problems, and “toning down” of large driftwood shelters to ensure adequate visitor health and safety.

2. Evaluate existing structures like fences, fallen down buildings, etc. case-by-case (after addressing cultural and natural resource concerns and management use needs) to determine which can be removed or kept.
3. Maintain existing fences and barriers erected to protect sensitive natural or cultural areas.
4. Maintain existing springs for potable water at Bear Hollow and Miller camps.

Trails

Maintain existing network of backcountry trails for primitive and predominantly self-directed hiking/backpacking and equestrian use to offer a diversity of backcountry use opportunities. Provide a consistent standard of trail maintenance for all backcountry trails through the use of volunteers, work groups such as the California Conservation Corps (CCC), and BLM employees.

Signage and Interpretation

The minimal existing backcountry signs and interpretive information will be maintained, as required, to provide for visitor safety and resource protection. All signs and interpretive structures will continue to be aesthetically pleasing (i.e., natural wood routed signs rather than metal) with consistent style by sign type. Existing signs and interpretive structures include directional signs at all trail junctions, identification signs posting private land boundaries, and identification signs locating backcountry campsites and water sources.

Monitoring

Continue the ongoing comprehensive monitoring program to determine impacts from recreational use on natural and cultural resources in the backcountry and to assess social impacts of changing visitor use. This monitoring program includes the following components:

1. Collection of visitor use statistics, particularly along the more heavily used sections of the backcountry, most notably the Lost Coast Trail. This is accomplished through data collected from trailhead registers, traffic counters, patrol logs (counting cars at parking areas as well as backcountry users), Special Recreation Permit information, and correspondence with visitors.
2. Collection of resource impact information, particularly along trails and campsites. This includes campsite inventory, evaluation of human and stock impacts on vegetation, soils, freshwater, etc. as well as identifying resource problems like sanitation, litter, proliferation of fire rings, etc. Separate monitoring of resources such as cultural sites, invasive plants, water quality, fisheries, etc. may also be conducted as needed by resource specialists.
3. Survey of visitor preferences and experiences. This survey was conducted in 1997 and again in 2003 and is helpful in determining trends in visitor enjoyment, social impacts, and perception of resource impacts from visitor use.

4. Evaluation (through contact with visitors, written responses at trailhead registers, visitor surveys, on site observations, etc.) of informal visitor perceptions and identification of specific problems in the field.

3.18.3.2 *Alternative A: Frontcountry Zone*

Management Goal

Provide a mix of motorized and non-motorized recreational experiences. Allow recreational facilities and vehicular access for camping, day use, and backcountry trailhead access at a level which maintains the high visual quality of the area and protects the area's natural resources. Manage for a variety of recreational activities to complement the primitive recreational opportunities in the Backcountry Zone.

Objectives

Physical Setting/Facilities

Maintain the existing predominantly naturally appearing landscape with visitor access provided through a minimal network of roads and trails.

Maintain the existing system of on-site facilities to allow visitors opportunities for camping and day use as well as trailhead access to the backcountry trail system. Maintain the existing signs and informational facilities to provide the visitor with the directional, interpretive, and regulatory information necessary to enhance their recreational experiences and protect important natural and cultural resources in the area.

Social Setting

Provide for types and levels of recreational use that provide less rugged, primitive opportunities emphasized within the primitive Backcountry Zone. The Frontcountry Zone will also provide visitors choices in where they may access the Backcountry Zone.

Visitors are expected to practice a level of personal responsibility in following management guidelines and regulations to protect the natural and cultural resources in the area, the recreational facilities and respect the rights of other recreationists and local residents.

Management Presence

Management actions will continue to occur both on-site and off-site so visitors can experience a mix of personal freedom and security. Management actions will inform visitors of recreational opportunities, safety concerns, and regulations designed to protect the natural and cultural resources in the area.

Management presence on-site will continue to be more apparent than in the backcountry, with regular patrols of campgrounds (including fee collections), day use facilities, trailheads, etc. by law enforcement rangers, maintenance and fire control personnel, and other staff members responsible for updating kiosk information, monitoring visitor use, and other tasks.

Allowable Uses

A mix of motorized and non-motorized recreational uses including car camping, driving for pleasure, hiking, mountain biking, equestrian use, hunting, fishing (restricted to certain areas), nature study, wildlife viewing, and other activities compatible with the management objectives for this zone. Emphasize uses not available or compatible in the Backcountry Zone. Continue to allow for both commercial and non-commercial group use, through established permitting procedures.

Management Actions

Actions to achieve zone management objectives include maintaining existing facilities to accommodate visitor needs and resource protection, maintaining a road and trail system, signing and interpretive information, visitor use and resource monitoring, and facility patrols and maintenance. Specific actions are detailed below:

Visitor Use Capacity

Although the major emphasis of the existing visitor use allocation system within the King Range is in the Backcountry Zone, there are maximum numbers of people and stock allowed within developed campsites (eight people per campsite). Nadelos Campground may be reserved for groups ranging from twenty to a maximum of sixty people.

Facility Development

Existing recreation facilities will be maintained, as required, to meet the minimal needs of visitors to the King Range, to protect resources, and to promote visitor safety and knowledge of the area. These facilities include Nadelos, Wailaki, Tolkan, Horse Mountain, Honeydew, and Mattole Campgrounds, trailhead parking and informational kiosks at all trailheads, including an expanded, paved trailhead facility at the more heavily used Black Sands Beach trailhead, and the BLM administrative site/visitor center in Whitethorn.

Trails

Maintain existing Universally Accessible interpretive trail between Nadelos and Wailaki Campgrounds.

Signage and Interpretation

Adequate Frontcountry signs and interpretive information will be maintained to provide for visitor orientation, safety, and education, and to promote resource protection. All signs and interpretive structures will continue to be installed to meet safety requirements, provide consistency by sign type, and to be as aesthetically pleasing as possible. Existing sign types include directional signs at all road junctions, trailheads, and trail junctions, visitor safety and regulatory signs along roads and at trailheads and campgrounds, signs identifying private land boundaries and roads closed to public use, signs identifying water sources, sensitive resource areas, and other important features, and interpretive panels along the interpretive trail between Nadelos and Wailaki Campgrounds, at the Punta Gorda Lighthouse, and at an important archaeological site near Mattole Campground.

Monitoring

Although monitoring efforts are focused primarily within the Backcountry Zone, some monitoring of the Frontcountry Zone is necessary to determine visitor use levels, vandalism or deterioration of recreational facilities, potential visitor safety problems, and resource damage. Monitoring of visitor use will continue to be conducted by use of traffic counters, counting vehicles parked at trailheads, campground fee collection information, observation sheets, patrol logs, and direct visitor contact.

Designation of Special Use and Use Areas

Nadelos Campground will continue to be open for reservation for group use under special permit. Non-traditional and newly emerging recreational uses will be allowed as long as they are consistent with the zone management objectives. Such uses will be monitored to assess potential conflicts, impacts to sensitive resources, or visitor safety issues.

3.18.3.3 *Alternative A: Residential Zone***Management Goal**

Direct recreation visitors to and focus impacts on public land instead of private lands in the Shelter Cove area. Provide more developed opportunities for group gatherings and individual use while still maintaining open space and scenic quality of the area. Provide visitor information, interpretation, and environmental education programs.

Objectives**Physical Setting/Facilities**

Complement the development of Shelter Cove by maintaining some open space and protecting the unobstructed scenic ocean views at select locations.

Maintain a system of on-site day use and overnight parking facilities to allow visitors access to the beach and tidepools, provide more developed recreation opportunities, and provide information and interpretive resources to promote environmental education and appreciation for the KRNCA.

Social Setting

Provide for types and levels of recreational use that can be physically accommodated by on-site facilities without causing undue conflicts with other recreational users and local residents and without degrading the recreational facilities and surrounding landscape.

Visitors are expected to practice a level of personal responsibility in following management guidelines and regulations to protect the area and respect the rights of others.

Management Presence

Management actions will occur mainly on-site although information concerning recreation opportunities will continue to be available for people before arriving in Shelter Cove. Management actions will inform

visitors of recreational opportunities, safety concerns, and regulations designed to protect the natural and cultural resources in the area.

Management presence on-site is more apparent than in the backcountry, with regular patrols of day use facilities and Black Sands Beach trailhead by law enforcement rangers, maintenance personnel, and other staff members responsible for updating kiosk information, monitoring visitor use, and other tasks.

Allowable Uses

Group picnicking and events such as weddings, memorial services, etc. sightseeing, picnicking, environmental education, wildlife viewing, staging for backcountry use, and other activities compatible with the management goal and objectives for this zone.

Management Actions

Actions proposed to achieve zone management objectives include permit systems, maintaining facilities to accommodate visitor needs and resource protection, signing and interpretive information, visitor use and facility condition monitoring, and facility patrols and maintenance. Specific actions are detailed below:

Visitor Use Capacity

The current maximum numbers of people permitted for group use of Mal Coombs Park will be continued.

Facility Development

Existing recreational and interpretive facilities will be maintained, as required, to accommodate public need for information and education and staging facilities for recreational activities. These facilities include:

1. Mal Coombs Park including restroom, parking lot, picnic tables, the relocated Cape Mendocino Lighthouse with accompanying interpretive information, monuments, interpretive panels, split rail barriers, and steps down to the beach and tidepools.
2. Maintain existing Black Sands Beach parking facility, restroom, overlooks, informational kiosks, emergency telephone and Accessible parking and off-loading area near beach. Ensure continued aesthetically pleasing landscaping, views from overlook, and visitor safety along cliff.
3. Maintain Seal Rock and Abalone Point areas for individual and small group day use. Provide opportunities for picnicking, wildlife viewing, interpretation, and other compatible recreational and educational activities. Continue to allow group use events on a case-by-case limited basis if such use does not result in resource damage or impacts to nearby residents.

Trails

Maintain wheelchair accessible trail in Mal Coombs Park to provide designated access between facilities (restroom, Mario's statue, Lighthouse, picnic areas, interpretive signs, parking area, etc.). Maintain safe and adequate beach access trail at Black Sands Beach trailhead.

Signage and Interpretation

Existing signs and interpretive information will be maintained to provide for visitor orientation, safety, and education, and to promote resource protection. All signs and interpretive structures will continue to meet safety requirements, provide consistency by sign type, and be as aesthetically pleasing as possible. Existing sign types include directional signs at key locations along Shelter Cove Road, identification, visitor safety, and regulatory signs, at facilities, adequate visitor information in kiosks at Black Sands Beach and Mal Coombs Park, and interpretive panels at Seal Rock, Abalone Point, Mal Coombs Park, and Black Sands Beach.

Monitoring

Although monitoring efforts will continue to be focused primarily within the Backcountry Zone, some monitoring of the Residential Zone is necessary to determine visitor use levels, vandalism, deterioration of recreational facilities, potential visitor safety problems, and resource damage. Monitoring of visitor use will continue to be conducted by use of traffic counters, counting vehicles parked at Black Sands Beach trailhead, Lighthouse visitation data, observation sheets and patrol logs, and direct visitor contact.

3.18.4 Alternative B

3.18.4.1 Alternative B: Backcountry Zone

Management Goal

Provide high quality non-motorized recreational opportunities. Preserve the area's unique character and identity as one of the few remaining coastal backcountry recreation areas in the U.S. Allow for levels of self directing recreational use that provide for very high quality opportunities for solitude and primitive recreation while protecting the diverse scenic and natural resources in the area.

Objectives

Physical Setting/Facilities

Maintain a naturally appearing landscape, with the sights, sounds, and forces of nature being the predominant physical features and sensations that visitors experience. The works and impacts of humans are minimal in extent and transitory in nature.

Maintain a network of backcountry trails and minimal directional signing. No other facilities will be allowed and existing facilities will be removed, where possible.

Social Setting

Provide for levels of use that allow for high quality solitude and low levels of encounters between visitors throughout the year.

Visitors are expected to practice a high level of personal responsibility and self-sufficiency commensurate with a self-directed backcountry experience.

Management Presence

The majority of management actions will occur off-site so that visitors can experience freedom to choose travel and camping locations once they enter the backcountry. Management actions will prepare visitors to enter and use the backcountry safely and with minimal impacts to resources and other visitors.

Management presence on-site is subtle, with low, unobtrusive levels of visitor contact by BLM backcountry ranger and patrols by law enforcement rangers only in response to resource protection problems or emergency response.

Allowable Uses

Non motorized recreation activities including hiking, backpacking, surfing, surf fishing, equestrian use, camping, environmental education, wildlife viewing, and other activities consistent with the goal of providing high quality backcountry experiences. Allow for both commercial and non-commercial non-motorized recreational use, if consistent with zone objectives, through established permitting procedures.

Management Actions

Actions proposed to achieve zone management objectives include permit systems, removing structures, maintaining a trail system, minimal signing, visitor use, and resource monitoring, and identification of special group use areas. Specific actions are detailed below.

Visitor Use Management

a) Use Allocation. Within three years of plan completion, a comprehensive visitor use allocation system will manage anticipated increasing visitor numbers, particularly along the Lost Coast Trail. This system will be designed to prevent unacceptable resource impacts and ensure a high quality visitor backcountry experience. The system will be designed to provide the highest opportunities for solitude and lowest visitor densities of the plan alternatives. The visitor use allocation system will attempt to redistribute use to off-peak periods as one means to reduce visitor encounters.

Visitor use allocation will be based on existing visitor use numbers and measurable resource impacts. This allocation system is an adaptive strategy that will be implemented as soon as possible to address the trend of steadily increasing visitation in the King Range and restrict use numbers to promote high quality opportunities for solitude and primitive backcountry recreation. The visitor use allocation system will include, at a minimum, the following components:

1. Range of allowable visitor numbers within the Backcountry Zone as a whole, along the 25 mile Lost Coast Trail, and from each trailhead.

2. Percentage of visitor use allowed by commercial groups, non-commercial organized groups, and private parties.
3. Maximum allowable group size limits along the Lost Coast Trail and on the upland trails.
4. Permit system administration to include:
 - Who requires a permit (i.e., commercial groups, non-commercial groups, all overnight users, and/or day users?)
 - Where and how people may obtain permits
 - Fee schedule
 - Information to disseminate (i.e., fire restrictions, bear canister requirement, proper sanitation practices, etc.)
5. Indicators of change will be identified to monitor and implement use allocation strategies. These indicators include: changes in visitation, activity preference shifts, new technologies, changes in commercial use (i.e., outfitter and guide service), economic factors, demographic shifts, and levels of resource impacts.
6. In response to immediate concerns over increasing visitation, the following interim actions will be implemented prior to completion of the visitor use allocation plan:
 - a. Commercial outfitters will not be allowed to operate during Memorial Day or Fourth of July weekends.
 - b. A self registration permit system will be implemented to ensure better information dispersal to the public and to improve visitor use statistics for inclusion in developing the use permitting plan.
 - c. Group size limits will be reduced to ten people (maximum fifteen “heartbeats” including people and stock animals).

Under this alternative, ensuring very high opportunities for solitude and primitive, backcountry recreation experiences is the primary focus in addition to ensuring very low impacts to the natural and cultural resources present. A permit system would be implemented immediately and an adaptive use allocation program established soon after to reverse the trend of increasing use levels. Although this may mean that some visitors will be turned away and both commercial and non-commercial groups will have greater difficulty getting permits, those who are able to get permits will be assured of quality recreational opportunity with a high potential for solitude.

Facility Development

Minimal backcountry facilities will be maintained to allow upland trail camping and promote resource protection only. Visitor use levels will be used as the primary tool, rather than facility development, to minimize resource damage. Potential actions include, but are not limited to:

1. Maintain existing designated backcountry campsites along the upland trails.

2. Manage campsites along the Lost Coast to protect aesthetics and reduce resource impacts. Remove driftwood shelters and fire rings along the coast to maintain as natural a setting as possible.
3. Evaluate existing structures like fences, fallen down buildings, etc. case-by-case (after addressing cultural and natural resource concerns) to determine which can be removed to enhance the natural character of the land;
4. Construct or maintain low impact fences and barriers only where absolutely necessary to protect sensitive natural or cultural areas.

The management goal and overwhelming public scoping feedback identifies the Backcountry Zone as an area to be managed with minimal facilities necessary to ensure adequate visitor safety and resource protection. Providing minimal, aesthetically pleasing backcountry campsites and water sources, where feasible and appropriate, will accommodate visitor use and spread out such use to help ensure high quality opportunities for solitude and primitive recreation. Evaluating facilities present (i.e., fences, remains of former structures, etc.) for possible removal will help reduce the man-made visual impacts in the backcountry.

Trails

Maintain network of backcountry trails for primitive and self-directed hiking/backpacking and equestrian use to offer a diversity of backcountry use opportunities. Specific actions proposed may include but are not limited to:

1. Provide all gates and fences which block trails from vehicle access with horse passes to allow equestrian use.
2. Prohibit mountain bikes on backcountry trails in anticipation of possible wilderness designation for much of the Backcountry Zone and to preserve the area for non-mechanized recreational use.
3. Restrict additional trail development to minor reroutes to protect visitor safety and fragile resources, where necessary. Do not develop additional trails to benefit recreationists.

The unique, primitive, coastal backcountry within the KRNCA is the primary attraction for most people visiting the King Range public lands. The existing trail network provides a comprehensive linkage between the Lost Coast trail and upland trails with trailheads accessible by motorized vehicles. Under this alternative, maintaining these trails for backpacking and equestrian use without opening up other, primitive portions of the King Range to additional access will continue to allow adequate recreational opportunities while minimizing impacts to the natural environment.

Signage and Interpretation

Minimal backcountry signs will be installed and maintained, as required to provide for visitor safety and orientation and resource protection. All signs will be aesthetically pleasing (i.e., natural wood routed signs rather than metal) with consistent style by sign type. Proposed actions include but are not limited to the following:

1. Provide directional signs at all trail junctions.
2. Install identification signs, where necessary, to post private land boundaries to help prevent trespass onto private lands.

Minimal signing is critical to ensure that visitors don't get lost, trespass onto private land, or damage sensitive natural or cultural resources. Providing aesthetically pleasing signs with consistent style will provide visitor safety commensurate with the desired self directed primitive recreational experiences.

Monitoring

Conduct an ongoing comprehensive monitoring program to determine impacts from recreational use on natural and cultural resources in the backcountry, assess social impacts of changing visitor use, make necessary adjustments to the visitor use permitting program, and achieve zone management objectives. The monitoring program will include the following:

1. Collection of visitor use statistics, particularly along the more heavily used sections of the backcountry, most notably the Lost Coast Trail. This will be accomplished through trailhead registers, traffic counters, patrol logs (counting cars at parking areas as well as backcountry users), Special Recreation Permit information, establishment of a backcountry permit system, and correspondence with visitors. Emphasis will be placed on collecting visitor use information with minimal impact on the privacy of the backcountry visitor.
2. Collection of resource impact information, particularly along trails and campsites. This would include campsite inventory, evaluation of human and stock impacts on vegetation, soils, etc. as well as identifying resource problems like sanitation, litter, proliferation of fire rings, etc. Separate monitoring of resources such as cultural sites, invasive plants, water quality, etc. will also be conducted as needed by resource specialists.
3. Survey of visitor preferences and experiences. This survey should be conducted approximately every 5 years or as needed to determine trends in visitor enjoyment of the area and changes in social impacts from projected increases in future visitor use. This survey will also improve our visitor use data and should be conducted with minimal impact on the privacy of the backcountry visitor.
4. Evaluation (through contact with visitors, written responses at trailhead registers, visitor surveys, on site observations, etc.) of significant changes in activity preferences, new technologies, commercial interest, and economic, demographic, and environmental conditions.

Implementation and continuance of an effective monitoring program is essential to development of the visitor use permitting program as well as keeping abreast of overall trends in user interests, preferences, satisfaction, and types of use.

Designation of Special Use and Use Areas

a) Special Uses. Non-traditional and newly emerging recreational uses will be allowed as long as they are consistent with the zone management goals. Such uses (i.e., geocaching, paragliding, etc.) will be

monitored to assess potential conflicts, impacts to sensitive resources, or visitor safety issues. Recreational uses that conflict or are likely to conflict with the Backcountry Zone objectives need to be managed to eliminate those conflicts. Identified proposed actions include but are not limited to the following:

1. Mountain bike use: Prohibit mountain bike use on all trails within the Backcountry Zone.
2. Boats landing on Lost Coast: Disallow all motorized watercraft from landing along the BLM administered portion of the Lost Coast except for emergency purposes.
3. Low flying aircraft along beach: Work with Humboldt County, the Federal Aviation Administration and other agencies with management authority over King Range Airspace to establish parameters for commercial touring flights over the Backcountry Zone, and to discourage both private and commercial low flying aircraft.
4. Competitive events: Disallow any competitive events within the Backcountry Zone.
5. Hunting: Coordinate with California Dept. of Fish and Game to change, if feasible, the deer rifle hunting season for the King Range to begin after Labor Day weekend.

Unforeseen changes in recreational uses, patterns, and technologies force us to remain flexible and adaptive in managing such emerging issues. Within the goal of managing the Backcountry Zone to protect its primitive, non-motorized, self directing recreation opportunities, the BLM will try to allow new or expanded activities as long as they do not unduly interfere with visitor safety, resource protection, or conflict with other recreational pursuits. Prohibiting mountain bikes on backcountry trails would preserve the area for non-mechanized recreational use. The shore landings of motorized watercraft, including boats, zodiacs, jet skis, and other craft powered with internal combustion engines, is incompatible with the primitive recreation objectives of the Backcountry Zone. Airplane and helicopter use for touring flights has become a major impact in many highly scenic backcountry areas. The primitive, backcountry use zone is not considered an appropriate place for competitive recreational events. Changing the deer rifle hunting season to begin after Labor Day would reduce conflicts and potential safety concerns during the busy holiday weekend.

b) Special Use Areas. Specific areas may be designated as special use areas to promote quality primitive recreational experiences and to accommodate appropriate differences in recreational use levels and types. Manage Big Flat/Miller Flat to accommodate slightly higher numbers of people. Require permitted groups to camp at Big Flat/Miller Flat rather than at Shipman or Buck Creek. Require all permitted groups to spend any layover days at Big Flat/Miller Flat instead of Shipman Creek or Buck Creek. Establish a horse camp at Miller Flat.

Managing Big Flat/Miller Flat for slightly higher visitation would channel organized groups (having generally larger numbers of people with potentially greater impacts) into the one, popular use area that can accommodate higher use levels due to its spacious setting, higher level of existing development (i.e., private dwelling, airstrip, etc.), and an abundance of suitable campsites.

3.18.4.2 *Alternative B: Frontcountry Zone*

Management Goal

Provide a mix of motorized and non-motorized recreational experiences. Allow recreational facilities and vehicular access for camping, day use, and backcountry trailhead access at a level which maintains a high visual quality of the area and protects the area's natural resources. Manage for a variety of recreational activities to complement the primitive recreational opportunities in the Backcountry Zone.

Objectives

Physical Setting/Facilities

Maintain a predominantly naturally appearing landscape with visitor access provided through a minimal network of roads and trails.

Maintain a minimal system of on-site facilities to allow visitors opportunities for camping and day use and trailhead access to the backcountry trail system. Provide signing and informational facilities necessary to provide the visitor with the directional, interpretive, and regulatory information necessary to enhance their recreational experiences and protect important natural and cultural resources in the area.

Social Setting

Provide for types and levels of recreational use that provide less rugged, primitive opportunities emphasized within the primitive Backcountry Zone. The Frontcountry Zone will also provide visitors choices in where they may access the Backcountry Zone.

Visitors are expected to practice a level of personal responsibility in following management guidelines and regulations to protect the natural and cultural resources in the area, recreational facilities and to respect the rights of other recreationists and local residents.

Management Presence

Management actions will occur both on-site and off-site so visitors can experience a mix of personal freedom and security. Management actions will inform visitors of recreational opportunities, safety concerns, and regulations designed to protect the natural and cultural resources in the area.

Management presence on-site is somewhat more apparent than in the backcountry, with regular patrols of campgrounds (including fee collections), day use facilities, trailheads, etc. by law enforcement rangers, maintenance and fire control personnel, and other staff members responsible for updating kiosk information, monitoring visitor use, and other tasks.

Allowable Uses

A mix of motorized and non-motorized recreational uses including car camping, driving for pleasure, hiking, mountain biking, equestrian use, hunting, fishing (restricted to certain areas), nature study, wildlife viewing, and other activities compatible with the management objectives for this zone. Emphasize recreational uses not available or compatible in the Backcountry Zone. Allow for both commercial and

non-commercial recreational use, if appropriate to meet zone objectives, through established permitting procedures

Management Actions

Actions proposed to achieve zone management objectives include developing facilities to accommodate visitor needs and resource protection, maintaining a road and trail system, signing and interpretive information, visitor use and resource monitoring, and facility patrols and maintenance. Specific actions are detailed below:

Visitor Use Capacity

Incorporate the Lost Coast segment from Mattole trailhead to the Punta Gorda Lighthouse into the backcountry visitor use allocation system. Although the major emphasis of the proposed visitor use allocation system within the King Range will be in the Backcountry Zone, maximum numbers of people and stock will be determined for each developed facility in the Frontcountry Zone, most notably campgrounds. If existing facilities are expanded, changes in allowable use will be made. Maximum numbers of people per campsite (presently eight per site), group size limitations for reserved campgrounds (such as Nadelos, present maximum sixty people) and allowable numbers and locations of stock use will be determined site by site.

Facility Development

Adequate recreation facilities will be developed as required to meet the minimal needs of visitors to the King Range, to protect resources, and to promote visitor safety and knowledge of the area. Facilities will be installed to provide adequate overnight and day use recreational opportunities consistent with maintaining an overall natural, aesthetically pleasing landscape. Potential facilities include, but are not limited to:

1. Provide and maintain trailhead facilities including parking and informational kiosks at all trailheads.
2. Maintain existing campgrounds at Nadelos, Wailaki, Tolkan, and Mattole. Remove Horse Mountain Campground when the facilities deteriorate to the point of requiring major renovation to keep it open. Provide potable drinking water, if feasible, at Tolkan and Mattole. Consider closing Honeydew Campground if vandalism makes upkeep difficult and expensive and keep it as a day use facility with access to the Mattole River. Where feasible, ensure that restrooms and other facilities are retrofitted to best meet Universal Accessibility standards.
3. Disallow camping within ¼ mile from Mattole Campground to prevent damage to sensitive resources, reduce fire danger, and prevent littering, sanitation and vehicle use problems.
4. Maintain visitor information and interpretive center at the BLM office in Whitethorn. Extend visitor hours during high use periods, when possible, to better accommodate visitors.
5. Maintain the Punta Gorda Lighthouse for preservation as an historical landmark and interpretive site.

The major objectives of the Frontcountry Zone are to provide access to the Backcountry Zone, to encourage certain recreational uses which may not be possible or allowed in the Backcountry Zone, and to accommodate basic visitor needs. To accomplish these goals, a minimal number and quality of developed campgrounds, day use and overnight parking facilities, and trailheads are necessary.

Trails

Establish and maintain a minimal network of trails connecting to the Backcountry Zone trails and for use in the frontcountry. Emphasize recreational uses less available in the Backcountry Zone. Emphasize lower difficulty hiking use and interpretive/environmental education use for frontcountry trails to complement the more rugged network of Backcountry Zone trails. Specific actions proposed may include but are not limited to:

1. Identify opportunities to provide easier level of trail access for a wider range of backcountry trail users. Establish loop trail opportunities for mountain bikes and equestrian use, linking Paradise Ridge Road to King Peak Road, possibly via the old Queen Peak Road.
2. Expand and improve interpretive trail between Wailaki and Nadelos Campgrounds by developing a loop trail, if feasible, and making the entire loop trail wheelchair accessible;
3. Provide adequate trail maintenance and barriers against illegal OHV use while still providing horse passes for equestrian use.

This alternative would provide some additional opportunities for equestrian and mountain biking as well as easier trails identified as currently inadequate within the KRNCA. Minimal new trail construction will reduce environmental impacts, cost, and allow the BLM to focus more heavily on maintaining existing trails.

Signage and Interpretation

Minimal frontcountry signs and interpretive information will be installed and maintained to provide for visitor orientation, safety, and education, and to promote resource protection. All signs and interpretive structures will be installed to meet safety requirements, provide consistency by sign type, and to be as aesthetically pleasing as possible. Proposed actions include, but are not limited to:

1. Provide directional signs at all road junctions, trailheads, and trail junctions.
2. Provide adequate visitor safety and regulatory signs, as needed, along roads and at trailheads and campgrounds.
3. Provide signs, where necessary, to identify private land boundaries and roads closed to public use.
4. Provide signing, where necessary, to identify water sources, sensitive resource areas, or other important features.
5. Provide interpretive signs or panels, where feasible, at key locations such as along the interpretive trail between Nadelos and Wailaki Campgrounds and the Punta Gorda Lighthouse.

Adequate directional signing is critical to ensure that visitors can find BLM roads and facilities without getting lost, trespassing onto private property, or traveling off legally designated roads. Safety and regulatory signs are equally important to ensure compliance with important rules such as seasonal campfire prohibitions, mandatory use of bear canisters, and protection of sensitive areas. Interpretive signing at key locations can enhance visitor knowledge and enjoyment of the area while hopefully promoting responsible stewardship.

Monitoring

Although monitoring efforts will be focused primarily within the Backcountry Zone, some monitoring of the Frontcountry Zone is necessary to determine visitor use levels, vandalism or deterioration of recreational facilities, potential visitor safety problems, and resource damage. Monitoring of visitor use will be conducted by use of traffic counters, counting vehicles parked at trailheads, campground fee collection information, observation sheets and patrol logs and direct visitor contact.

Designation of Special Use and Use Areas

Specific areas may be designated as special use areas to accommodate specific visitor needs such as equestrian camping. Nadelos Campground may be reserved for group use under special permit. Non-traditional and newly emerging recreational uses will be allowed as long as they are consistent with the zone management objectives. Such uses will be monitored to assess potential conflicts, impacts to sensitive resources, or visitor safety issues.

3.18.4.3 *Alternative B: Residential Zone*

Management Goal

Direct recreation visitors to and focus impacts on public land instead of private lands in the Shelter Cove area. Provide opportunities for recreational use while emphasizing open space and scenic quality of the area. Provide adequate visitor information and interpretation.

Objectives

Physical Setting/Facilities

Complement the development of Shelter Cove by maintaining some open space and protecting the unobstructed scenic ocean views at select locations.

Maintain a system of on-site day use and overnight parking facilities to allow visitors access to the beach and tidepools, provide more developed recreation opportunities, and provide information and interpretive resources to promote environmental education and appreciation for the KRNCA.

Social Setting

Provide for types and levels of recreational use that can be physically accommodated by on-site facilities without causing undue conflicts with other recreational users and local residents and without degrading the recreational facilities and surrounding landscape.

Visitors are expected to practice a level of personal responsibility in following management guidelines and regulations to protect the area and respect the rights of others.

Management Presence

Management actions will occur mainly on-site although information concerning recreation opportunities will be available for people before they arrive in Shelter Cove. Management actions will inform visitors of recreational opportunities, safety concerns, and regulations designed to protect the natural and cultural resources in the area.

Management presence on-site is more apparent than in the backcountry, with regular patrols of day use facilities and Black Sands Beach trailhead by law enforcement rangers, maintenance personnel, and other staff members responsible for updating kiosk information, monitoring visitor use, and other tasks.

Allowable Uses

Group picnicking and events such as weddings, memorial services, etc. sightseeing, picnicking, environmental education, wildlife viewing, staging for backcountry use, and other activities compatible with the management goal and objectives for this zone.

Management Actions

Actions proposed to achieve zone management objectives include permit systems, developing facilities to accommodate visitor needs and resource protection, signing and interpretive information, visitor use and facility condition monitoring, and facility patrols and maintenance. Specific actions are detailed below:

Use Allocation

Although the major emphasis of the proposed visitor use allocation system within the King Range will be in the Backcountry Zone, maximum numbers of people permitted for group use of Mal Coombs Park (and possibly Abalone Point and Seal Rock on a case-by-case basis) will be determined.

Facility Development

Minimal recreational and interpretive facilities will be developed, as required, to accommodate public need for information and education and provide staging facilities for recreational activities with minimal impact on the scenic resources which attract visitors to the area. Facilities will be installed to provide adequate day use recreational opportunities and overnight parking for backcountry users consistent with maintaining an overall natural, aesthetically pleasing landscape. Potential facilities include, but are not limited to:

1. Develop and maintain Mal Coombs Park including:
 - Upgrade and improve the restroom to ensure adequate provisions for persons with disabilities and accommodate heavy seasonal use.
 - Work cooperatively with the Cape Mendocino Lighthouse Preservation Society, the Shelter Cove Pioneers, and other local groups to maintain the Lighthouse, memorials, and other

approved joint community projects to develop and maintain such facilities in an aesthetically pleasing and well maintained standard.

- Maintain the parking area with possible upgrade to make more efficient use of available space.
 - Maintain existing pedestrian access to tidepools. Provide information and interpretation for tidepool ecology and the need to preserve tidepool diversity.
2. Maintain existing Black Sands Beach parking facility. Improve landscaping, views from overlook, and visitor safety along cliff. Maintain extensive visitor information kiosks. Disallow all camping within ¼ mile from Black Sands Beach trailhead.
 3. Maintain Seal Rock and Abalone Point areas for individual and small group day use. Provide opportunities for picnicking, wildlife viewing, interpretation, and other compatible recreational and educational activities.

Trails

Maintain wheelchair accessible trail in Mal Coombs Park to provide access between facilities (restroom, Mario's statue, Lighthouse, picnic areas, interpretive signs, parking area, etc.). Provide safe and adequate beach access trail at Black Sands Beach trailhead.

Signage and Interpretation

Adequate signs and interpretive information will be installed and maintained to provide for visitor orientation, safety, and education, and to promote resource protection. All signs and interpretive structures will be installed to meet safety requirements, provide consistency by sign type, and to be as aesthetically pleasing as possible. Proposed actions include, but are not limited to:

- Provide directional signs at key locations along Shelter Cove Road.
- Provide adequate identification, visitor safety, and regulatory signs, as needed, at facilities.
- Provide adequate visitor information in kiosks at Black Sands Beach and Mal Coombs Park.
- Provide interpretive signs or panels at key locations such as Seal Rock, Mal Coombs Park overlooking the tidepools, and other educational features.

Monitoring

Although monitoring efforts will be focused primarily within the Backcountry Zone, some monitoring of the Residential Zone is necessary to determine visitor use levels, and assess vandalism or deterioration of recreational facilities, potential visitor safety problems, and resource damage. Monitoring of visitor use will be conducted by use of traffic counters, counting vehicles parked at Black Sands Beach trailhead, Lighthouse visitation data, observation sheets and patrol logs, and direct visitor contact.

Designation of Special Use and Use Areas

Group events may be authorized at Mal Coombs Park on a case-by-case basis if such use is consistent with the objectives of this zone and do not unduly impact local residents and other recreational users. Non-traditional and newly emerging recreational uses will be allowed as long as they are consistent with

the zone management objectives. Such uses will be monitored to assess potential conflicts, impacts to sensitive resources, or visitor safety issues.

3.18.5 Alternative C (Preferred)

3.18.5.1 Alternative C: Backcountry Zone

Management Goal

Provide high quality non-motorized recreational opportunities. Preserve the area's unique character and identity as one of the few remaining coastal backcountry recreation areas in the U.S. Allow for levels of predominantly self directing recreational use that provide for high quality opportunities for solitude and primitive recreation and freedom of access while protecting the diverse scenic and natural resources in the area.

Objectives

Physical Setting/Facilities

Maintain a naturally appearing landscape, with the sights, sounds, and forces of nature being the predominant physical features and sensations that visitors experience. The works and impacts of humans are minimal in extent and transitory in nature.

Maintain a network of backcountry trails and directional signing. Other facilities will be the minimum necessary for visitor safety (commensurate with the backcountry setting) and resource protection. On-site facilities will be provided only after alternative means of addressing resource protection and safety issues have been exhausted. Facilities will not be installed for visitor convenience.

Social Setting

Provide for levels of use that allow for solitude and low levels of encounters between visitors at most locations and times of the year. Levels of use during summer weekends and at popular campsites will allow moderate levels of encounters between visitors.

Visitors are expected to practice a level of personal responsibility and self-sufficiency commensurate with a self-directed backcountry experience.

Management Presence

The majority of management actions will occur off-site so that visitors can experience freedom to choose travel and camping locations once they enter the backcountry. Management actions will prepare visitors to enter and use the backcountry safely and with minimal impacts to resources and other visitors.

Management presence on-site is subtle, with moderate levels of direct visitor contact by BLM backcountry ranger and intermittent patrols by law enforcement rangers.

Allowable Uses

Non motorized recreation activities including hiking, backpacking, surfing, surf fishing, equestrian use, camping, environmental education, wildlife viewing, hunting and other activities consistent with the goal of emphasizing backcountry experiences. Allow for both commercial and non-commercial non-motorized recreational use, if consistent with zone objectives, through established permitting procedures.

Management Actions

Actions proposed to achieve zone management objectives include permit systems, developing facilities for resource protection, maintaining a trail system, signing and interpretive information, visitor use, and resource monitoring, and identification of special management areas. Specific actions are detailed below.

Visitor Use Management

a) Use Allocation. Within five years of plan completion, a comprehensive visitor use allocation plan will be developed to manage anticipated increasing visitor numbers, particularly along the Lost Coast Trail. This system will be designed to prevent unacceptable resource impacts and ensure continued high quality visitor backcountry experience. The visitor use allocation system will attempt to redistribute use to off-peak periods as one means to reduce resource impacts and visitor encounters.

Visitor use allocation will be based on existing and projected visitor use numbers and measurable resource impacts. This allocation system is an adaptive strategy that will progress, as needed and based upon monitoring information, from limits on commercial groups during popular holiday weekends (currently being implemented), to permitting all users within established limits on popular holiday weekends, to high-use season permits, to year round permits, as future increases in visitation necessitate. The visitor use allocation system will include, at a minimum, the following components:

1. Range of allowable visitor numbers within the Backcountry Zone as a whole, along the 25 mile Lost Coast Trail, and from each trailhead.
2. Percentage of visitor use allowed by commercial groups, non-commercial organized groups, and private parties.
3. Maximum allowable group size limits along the Lost Coast Trail and on the upland trails.
4. Permit system administration to include:
 - Who requires a permit (i.e., commercial groups, non-commercial groups, all overnight users, and/or day users?)
 - When permits are required (i.e., major holiday weekends, summer season, or other times of the year?)
 - Where and how people may obtain permits
 - Fee schedule
 - Information to disseminate (i.e., fire restrictions, bear canister requirement, proper sanitation practices, etc.)

5. Indicators of change will be identified to monitor and implement visitor use allocation strategies. These indicators include such factors as: visitation increases, activity preference shifts, new technologies, changes in commercial use (i.e., outfitter and guide service), economic factors, demographic shifts, and levels of resource impacts.

The BLM is attempting to balance the accommodation of backcountry users wishing to explore and enjoy the King Range backcountry with the need to protect its natural and cultural resources and provide quality recreational experiences. Also, some backcountry camping locations have a very limited physical space (e.g., Buck Creek and Shipman Creek) to accommodate users. In response to similar crowding and capacity issues, many public land locations have implemented visitor use allocation plans. These programs serve to protect natural resources and provide quality opportunities for the types of experiences called for under area management goals. Achieving this balance is a formidable task and the step of moving to a more regulated use allocation system is a sensitive and often controversial issue. The need for such a system may be based on factors such as measurable resource damage/deterioration, decreasing visitor enjoyment of the area, visitor conflicts, and permittee complaints. The advantages of establishing a use allocation system are to prevent undesirable resource deterioration, and ensure continued high quality backcountry experiences. The disadvantages of such a system include the potential inconvenience for visitors to obtain a permit and disallowing some people and organized groups from visiting the backcountry during heavy use periods. In addition, implementing and managing such a program would increase the administrative burden (i.e., additional time and money) for the BLM. Establishing this use allocation will require improved visitor use statistics, several years of resource monitoring to assess resource condition trends, and determination of trends in visitor preferences and level of enjoyment.

b) Special Recreation Permits and Interim Group Allocation Measures. In response to concerns over increasing visitation and overcrowding on peak weekends, the following interim actions will be implemented. They will be adjusted if needed based on the final allocation plan:

1. Holiday Use: Commercial outfitters will not be allowed to operate during Memorial Day or Fourth of July weekends.
2. Group size limit: The existing requirement of no more than 25 people (organized group use only) leaving from each trailhead will be increased to 30 people to accommodate two groups having the maximum of fifteen group members each.
3. Upland trail use limit: Increased to fifteen maximum to allow upland trail camping, particularly for those groups combining use of both the upland trail and Lost Coast trail sections.
4. Interim Permit System: An interim permit system will be implemented to ensure better information dispersal to the public and to improve visitor use statistics for inclusion in developing the visitor use allocation plan. The initial system will be a non-fee self registration permit system with permits available at each trailhead.
5. Group Use Areas: Organized groups and commercial outfitters will be directed to specific locations that can accommodate larger groups without overwhelming the campsite capacity and diminishing the quality of the backcountry experience at other locations. Management of these areas will be an integral part of the visitor use allocation plan with adaptive strategies of reducing resource and social impacts on sensitive, less spacious locations. Initially identified group use areas include the following (other areas may be identified as needed):

- Big Flat/Miller Flat: As an interim policy until the visitor use allocation plan is completed, require permitted groups having multiple layover days to camp at Big Flat/Miller and encourage all permitted groups to camp here instead of Shipman Creek or Buck Creek. Inform the general public that there are ample camping locations here, but that during busy times their opportunities for solitude may be reduced.
 - Spanish Flat: Due to its expansive area, presence of several water sources, and numerous camping locations above the tidal zone, Spanish Flat has been identified as a second location to focus organized group camping. Group camping along Spanish Flat will be promoted over other, less spacious locations in the interim until more specific management guidance is developed in the visitor use allocation plan.
6. Group Avoidance Areas: Identify sensitive areas with limited camping sites to manage for lower visitation levels. Integrate group permit administration and possible future individual permit administration into the management of these areas to reduce overcrowding, resource damage, and impacts on zone management objectives. As an interim measure (until the visitor use allocation plan is completed), limit and discourage commercial and organized group camping at Cooskie, Buck, and Shipman Creeks through the Special Recreation Permit process.
 7. Competitive Events: Disallow competitive recreational permits within the Backcountry Zone.

Unforeseen changes in recreational uses, patterns, and technologies force us to remain flexible and adaptive in managing such emerging uses. Within the goal of managing the Backcountry Zone to protect its primitive, non-motorized, more self directing recreation opportunities, the BLM will try to allow new or expanded activities (such as geo-caching) as long as they do not unduly interfere with visitor safety, resource protection or conflict with other recreational pursuits. The concept of managing specific areas within the Backcountry Zone for higher or lower visitation is an attempt to accommodate organized groups and an optimum number of visitors while protecting the opportunities for solitude and primitive recreation that is so cherished by visitors. Big Flat, in particular, can accommodate higher use levels due to its spacious setting, higher level of existing development (i.e., private dwelling, airstrip, and driftwood shelters), an abundance of suitable campsites, and its popularity as a recreational destination for a wider range of recreational visitors. Competitive events are not considered appropriate for the backcountry use goals and objectives.

c) Visitor Use Fees. A nominal fee could be established for overnight backcountry use. No fees would be charged for day use. All fees would be reinvested into management and protection of backcountry resources, providing maintenance, and visitor services.

d) Hunting Season. Coordinate with California Department of Fish and Game to determine the feasibility of changing the hunting season for the King Range to begin after Labor Day weekend. This would serve to reduce conflicts and potential safety concerns during the holiday weekend.

e) Special Use Management. Non-traditional and newly emerging recreational uses will be allowed as long as they are consistent with the zone management goals. Such uses (i.e., geocaching, paragliding, etc.) will be monitored to assess potential conflicts, impacts to sensitive resources, or visitor safety issues. These uses will be managed to ensure that the primary objectives of the Backcountry Zone are achieved.

1. Mountain bike use: Mountain biking will be treated as a special use in this zone. Mountain bike use will be allowed on existing trails in the backcountry, but will not be encouraged or promoted based on the area's Wilderness Study Area status. Prohibit mountain bike use on new trails (including the Chinquapin Trail and Horse Mountain Creek Trail) inside the Wilderness Study Area (WSA), to meet official BLM policy.
2. Motorized watercraft landings: The shore landings of motorized watercraft, including boats, zodiacs, jet skis, and other craft powered with internal combustion engines, is incompatible with the primitive recreation use objectives of the Backcountry Zone and would be prohibited. This would not effect offshore anchorages or emergency landings.
3. Low flying aircraft: Work with Humboldt County, the Federal Aviation Administration, and other agencies with management authority over King Range Airspace to establish parameters for commercial touring flights over the Backcountry Zone, and to discourage commercial low flying aircraft. Airplane and helicopter use for touring flights has become a major impact in many highly scenic backcountry areas.

Facility Development

Minimal backcountry facilities will be developed as required to provide a level of visitor safety commensurate with a self directed, coastal backcountry experience for resource protection, but not for visitor convenience. Facilities will be installed in the backcountry only after other management techniques have been proven ineffective at resource protection. Potential actions include, but are not limited to:

1. Provide primitive backcountry campsites along the upland trails through maintenance and possible expansion of existing campsites, and developing additional sites, as needed, to prevent resource impacts from increasing backcountry use levels.
2. Construct or maintain fences and barriers where necessary to protect sensitive natural or cultural resources from visitor impacts. Barriers will be used only after education and other means of protection have been unsuccessful.
3. Develop springs for potable water sources, where feasible, near existing or future upland backcountry campsites. (Note: There is not a water issue on the beach).
4. Install visually unobtrusive bear proof food storage system (such as bear lockers or hanging wires) at popular sites where bear encounters are a persistent problem, and where frequent group layover days (particularly Big Flat) make it difficult for one bear canister per person to hold enough food for an entire trip. Such systems would be installed only if aggressive promotion and enforcement of bear canister use is not adequately solving the problem.
5. Install rustic, low maintenance backcountry toilets at popular sites where monitoring indicates substantial resource impacts or persistent sanitation problems. Facilities will be considered only after other means (such as promoting alternative sanitation techniques, requiring portable latrines for organized groups, etc.); of solving the problem have failed. Any backcountry toilets would be constructed using native materials and meet Class I Visual Resource Management Class objectives. They will use design concepts employed for facilities in designated wilderness

locations to allow for maintenance using minimum tools commensurate with the primitive, backcountry setting of the Lost Coast.

6. Evaluate existing structures such as fences and ranch buildings to determine historical significance, visitor safety issues, management needs etc. Develop a strategy/priorities for removal or maintenance.

The management goal and overwhelming public scoping feedback identifies the Backcountry Zone as an area to be managed with minimal facilities necessary to ensure adequate visitor safety and resource protection. Providing adequate and aesthetically pleasing backcountry campsites, and water sources, where feasible and appropriate, will accommodate visitor use and spread out such use to help ensure high quality opportunities for solitude and primitive recreation. Providing possible future backcountry toilets and/or bear-proof food storage containers may be necessary to reduce sanitation problems at major backcountry campsites, particularly along the Lost Coast, protect visitors from adverse wildlife encounters, particularly with bears, and help protect wildlife. Many miles of barbed-wire fencing and a number of buildings in various states of upkeep are located within the KRNCA. Some of these structures present visitor safety impacts or are visual intrusions, and need to be evaluated for removal.

Trails

Maintain network of backcountry trails for primitive and predominantly self-directed hiking/backpacking and equestrian use to offer a diversity of backcountry use opportunities. Specific actions proposed may include but are not limited to:

1. Work with equestrian groups to identify and prioritize “horse friendly” trails in the King Range. Improve these trails to remove/reduce barriers to horse access (i.e., provide horse pass-throughs at vehicle barriers, improve trailheads, reroute problem trail segments where possible, etc.), and maintain to equestrian standards. Identify additional trails suitable for equestrian use; and establish a horse camp at Miller Flat.
2. Develop springs for potable water sources where feasible at appropriate intervals near upland trails. Construct side trails, as necessary, to provide access to such water sources.
3. Develop additional trails, as needed, to complement existing trail system. Identify opportunities to provide easier level (reduced grades) of trail access for a wider range of backcountry trail users. Identified possible future trails include extending the Miller Loop Trail to the Lightning Trailhead and establishing a trail from the Mill Creek area to the Cooskie Creek Trail.
4. Provide a consistent standard of trail maintenance for all backcountry trails through the use of volunteers, work groups such as the California Conservation Corps, and BLM employees.
5. Develop a low gradient, easier interpretive trail in Hidden Valley with improved parking and information at the Hidden Valley trailhead. Ensure that such trail, if developed, does not adversely affect important wildlife and cultural resources in the area.

The unique, primitive, coastal backcountry within the KRNCA is the primary attraction for most people visiting the King Range public lands. Much of the visitor use within the backcountry depends on an adequate trail system to provide self directed primitive recreational opportunities. In addition, trails serve

to direct people along use corridors and away from identified sensitive resources such as archaeological sites and fragile vegetation communities. The existing trail network provides a comprehensive linkage between the Lost Coast trail and upland trails with trailheads accessible by motorized vehicles. Many of these trails are somewhat difficult with substantial elevation gains. While these trails provide the rugged, challenging, backcountry opportunities desired by many people, public scoping input identified the need to provide easier trails for a wider range of abilities. Although topography is a severely limiting factor in the backcountry, we will evaluate the potential for easier trails where appropriate and feasible.



Cooskie Creek Trail offers opportunities for equestrians.

Signage and Interpretation

Minimal backcountry signs and interpretive information will be installed and maintained, as required to provide for visitor safety and resource protection. All signs and interpretive structures will be aesthetically pleasing (i.e., natural wood routed signs rather than metal) with consistent style by sign type. Proposed actions include but are not limited to the following:

1. Provide directional signs at all trail junctions.
2. Install identification signs, where necessary, to post private land boundaries to help prevent trespass onto private lands.
3. Install identification signs to point out backcountry campsites, water sources, sensitive resource areas, or other important features, where necessary for visitor safety and resource protection.

A minimal level of rustic signing is critical to ensure that visitors do not get lost, trespass onto private land, suffer health risks (such as drinking untreated water from developed water sources), or damage sensitive natural or cultural resources. Providing aesthetically pleasing signs with consistent style will provide visitor safety commensurate with the desired self directed primitive recreational experiences.

Monitoring

Conduct an ongoing comprehensive monitoring program to determine impacts from recreational use on natural and cultural resources in the backcountry, assess social impacts of changing visitor use, make necessary adjustments to the visitor use permitting program, and achieve zone management objectives. The monitoring program will include the following:

1. Collection of visitor use statistics, particularly along the more heavily used sections of the backcountry, most notably the Lost Coast Trail. This will be accomplished through trailhead registers, traffic counters, patrol logs (counting cars at parking areas as well as backcountry users), Special Recreation Permit information, establishment of a backcountry permit system, and correspondence with visitors.
2. Collection of resource impact information, particularly along trails and campsites. This would include campsite inventory, evaluation of human and stock impacts on vegetation, soils, etc. as well as identifying resource problems like sanitation, litter, proliferation of fire rings, etc. Separate monitoring of resources such as cultural sites, invasive plants, water quality, etc. will also be conducted as needed by resource specialists.
3. Survey of visitor preferences and experiences. This survey should be conducted approximately every 5 years or as needed to determine trends in visitor enjoyment of the area and changes in social impacts from projected increases in future visitor use. This survey will also improve our visitor use data.
4. Evaluation (through contact with visitors, written responses at trailhead registers, visitor surveys, on site observations, etc.) of significant changes in activity preferences, new technologies, commercial interest, and economic, demographic, and environmental conditions.

Implementation and continuance of an effective monitoring program is essential to development of the visitor use permitting program as well as keeping abreast of overall trends in user interests, preferences, satisfaction, and types of use.

3.18.5.2 Alternative C: Frontcountry Zone

Management Goal

Provide a mix of motorized and non-motorized recreational experiences. Allow recreational facilities and vehicular access for camping, day use, and backcountry trailhead access at a level which maintains the high visual quality of the area and protects the area's natural resources. Manage for a variety of recreational activities to complement the primitive recreational opportunities in the Backcountry Zone.

Objectives

Physical Setting/Facilities

Maintain a predominantly naturally appearing landscape with visitor access provided through a network of roads and trails that complement the remote rural character of the Lost Coast.

Maintain a system of on-site facilities to allow visitors opportunities for camping, day use and trailhead access to the backcountry trail system. Provide adequate signing and informational facilities to provide the visitor with the directional, interpretive, and regulatory information necessary to enhance their recreational experiences and protect important natural and cultural resources in the area.

Social Setting

Provide for types and levels of recreational use that provide less rugged, primitive opportunities emphasized within the Backcountry Zone. The Frontcountry Zone will also provide visitors choices in where they may access the Backcountry Zone.

Visitors are expected to practice a level of personal responsibility in following management guidelines and regulations to protect the natural and cultural resources in the area, recreational facilities and respect the rights of other recreationists and local residents.

Management Presence

Management actions will occur both on-site and off-site so visitors can experience a mix of personal freedom and security. Management actions will inform visitors of recreational opportunities, safety concerns, and regulations designed to protect the natural and cultural resources in the area.

Management presence on-site is more apparent than in the backcountry, with regular patrols of campgrounds (including fee collections), day use facilities, trailheads, etc. by law enforcement rangers, maintenance and fire control personnel, and other staff members responsible for updating kiosk information, monitoring visitor use, and other tasks.

Allowable Uses

A mix of motorized and non-motorized recreational uses including car camping, driving for pleasure, hiking, mountain biking, equestrian use, hunting, fishing (restricted to certain areas), nature study, wildlife viewing, and other activities compatible with the management objectives for this zone. Emphasize uses not available or compatible in the Backcountry Zone. Allow for both commercial and non-commercial recreational use, if appropriate to meet zone objectives, through established permitting procedures.

Management Actions

Actions proposed to achieve zone management objectives include developing facilities to accommodate visitor needs and resource protection, maintaining a road and trail system, signing and interpretive information, visitor use and resource monitoring, and facility patrols and maintenance. Specific actions are detailed below:

Visitor Management

a) Use Capacity. Incorporate the Lost Coast segment from Mattole trailhead to the Punta Gorda Lighthouse into the backcountry visitor use allocation program. Although the major emphasis of the proposed visitor use allocation system within the King Range will be in the Backcountry Zone, maximum numbers of people and stock will be determined for each developed facility in the Frontcountry Zone, most notably campgrounds. If existing facilities are expanded or new ones constructed, changes in

allowable use will be made. Maximum numbers of people per campsite (presently eight per site), group size limitations for reserved campgrounds (such as Nadelos, present maximum sixty people) and allowable numbers and locations of stock use will be determined site by site.

Facility Development

Recreation facilities will be developed to meet the needs of visitors to the King Range, to protect resources, and to promote visitor safety and knowledge of the area. The overall goal of facilities will be to serve as basic staging areas and access corridors to allow visitors to enjoy the remote scenic character of the Lost Coast, and not to provide for a high level of comfort and convenience. Potential facilities include, but are not limited to:

1. Develop (if feasible) trailhead along Bear Creek near the Shelter Cove Road/Chemise Mountain Road intersection.
2. Provide and maintain trailhead facilities including parking and informational kiosks at all trailheads.
3. Maintain existing campgrounds at Nadelos, Wailaki, Tolkan, Horse Mountain, and Honeydew. Provide drinking water, where possible, at all campgrounds. Upgrade Horse Mountain Campground to meet Universal Accessibility standards. Tie in expanded mountain bike road/trail system (see trail section) to Horse Mountain Campground and promote this campground for mountain bike use. Where feasible, ensure that restrooms and other facilities are retrofitted to best meet Universal Accessibility standards.
4. Upgrade Mattole Campground to better delineate individual camping units and provide for maximum degree of Universal Accessibility. Ensure good source of drinking water and adequate parking for backcountry users. Manage camping in undeveloped areas surrounding Mattole Campground to prevent damage to sensitive resources, reduce fire danger, and prevent littering, sanitation, and other problems as necessary. Evaluate possibility of a less developed group camping and/or overflow camping area along the Mattole River close to the existing campground.
5. Provide small overlook/picnic sites at scenic view points such as along Saddle Mountain and Paradise Ridge roads.
6. Maintain visitor information and interpretive center at the BLM office in Whitethorn. Extend visitor hours during high use periods, when possible, to better accommodate visitors.
7. Maintain the Punta Gorda Lighthouse for preservation as an historical landmark and interpretive site.

The major management objectives of the Frontcountry Zone are twofold: first, to provide staging sites such as trailheads to access the Backcountry Zone; second, to provide for mountain biking, car camping, scenic driving, and other recreational activities which require the use of mechanized and motorized equipment, or a higher level of facility development. To accomplish these goals, a sufficient number and quality of developed campgrounds, day use and overnight parking facilities, and trailheads are necessary.

Trails

Establish and maintain a network of trails connecting to the Backcountry Zone trails and for use in the frontcountry. Emphasize uses that are less available in the Backcountry Zone. Emphasize lower difficulty hiking use and interpretive/environmental education use for frontcountry trails to complement the more rugged network of the Backcountry Zone trails. Specific actions proposed may include but are not limited to:

1. Develop additional trails, as needed, to complement existing trail system. Identify opportunities to provide easier level of trail access for a wider range of backcountry trail users. Establish loop trail opportunities for mountain bikes and equestrian use, linking Paradise Ridge road to King Peak road, possibly via the old Queen Peak road and/or other locations, and tie in this trail system to Horse Mountain and/or Tolkan Campgrounds.
2. Improve trail linking the northern portion of the Lost Coast trail with the Chemise Mountain/Sinkyone portion of the trail, if feasible.
3. Expand and improve interpretive trail between Wailaki and Nadelos Campgrounds by developing a loop trail and making the entire loop trail wheelchair accessible.
4. Re-establish trail from Tolkan Campground to Bear Creek.
5. Provide adequate trail maintenance and barriers against illegal OHV use while still providing horse passes for equestrian use.

Trails within the Frontcountry Zone are envisioned somewhat differently than backcountry trails. This is due to 1) the rugged, often steep nature of the backcountry trail system and the identified need expressed in public scoping input for lower gradient, easier trails; 2) the possible future exclusion of mountain bikes from areas designated in the future as wilderness; and 3) the identification of the need for easy, accessible, interpretive trails. Accommodating these needs as well as linking up major components of the backcountry trail system will enhance the overall trail system in the King Range and provide trail opportunities for a wider range of visitors.

Signage and Interpretation

Adequate frontcountry signs and interpretive information will be installed and maintained to provide for visitor orientation, safety, and education, and to promote resource protection. All signs and interpretive structures will be installed to meet safety requirements, provide consistency by sign type, and to be as aesthetically pleasing as possible. Proposed actions include, but are not limited to:

1. Provide directional signs at all road junctions, trailheads, and trail junctions.
2. Provide adequate visitor safety and regulatory signs, as needed, along roads and at trailheads and campgrounds.
3. Provide signs, where necessary, to identify private land boundaries and roads closed to public use.
4. Provide signing, where necessary, to identify water sources, sensitive resource areas, or other important features.

5. Provide interpretive signs or panels, where feasible, at key locations such as along the interpretive trail between Nadelos and Wailaki Campgrounds, at the Punta Gorda Lighthouse, and at a representative, important archaeological site near Mattole Campground.

Adequate directional signing is critical to ensure that visitors can find BLM roads and facilities without getting lost, trespassing onto private property, or traveling off legally designated roads. Safety and regulatory signs are equally important to ensure compliance with important rules such as seasonal campfire prohibitions, mandatory use of bear canisters, and protection of sensitive areas. Interpretive signing at key locations can enhance visitor knowledge and enjoyment of the area while hopefully promoting responsible stewardship of the area.

Monitoring

The monitoring program described for the Backcountry Zone will be applied to the coastal segment from Mattole trailhead to the Punta Gorda Lighthouse. Although monitoring efforts will be focused primarily within the Backcountry Zone, some monitoring of the Frontcountry Zone is necessary to determine visitor use levels, vandalism, or deterioration of recreational facilities, potential visitor safety problems, and resource damage. Monitoring of visitor use will be conducted by use of traffic counters, counting vehicles parked at trailheads, campground fee collection information, observation sheets, patrol logs, and direct visitor contact.

Special Uses and Use Areas

Specific areas may be identified as special use areas to accommodate specific visitor needs such as equestrian camping. Nadelos Campground may be reserved for group use under special permit. Non-traditional and newly emerging recreational uses will be allowed as long as they are consistent with the zone management objectives. Such uses will be monitored to assess potential conflicts, impacts to sensitive resources, or visitor safety issues.

3.18.5.3 *Alternative C: Residential Zone*

Management Goal

BLM lands within the Shelter Cove subdivision serve as major coastal access points and parks in the community. They will be managed to offer recreation and environmental education opportunities to visitors who want a taste of the Lost Coast without roughing it, or spending extended time in the backcountry. The area can accommodate more visitors than other parts of the King Range due to less difficult road access and ample public and private visitor facilities and services. Management will focus on interpreting the significant natural and cultural resources of the area through community partnerships. The BLM will also provide more developed opportunities for group gatherings and individual use while still maintaining open space and scenic quality of the area. An equally important management goal will be to protect the sensitive resources such as tidepools; high levels of use and easy access will require careful monitoring of these resources.

Objectives

Physical Setting/Facilities

Complement the development of Shelter Cove by maintaining some open space and protecting the unobstructed scenic ocean views at select locations.

Maintain a system of on-site day use and overnight parking facilities to allow visitors access to the beach and tidepools, provide more developed recreation opportunities, and provide information and interpretive resources to promote environmental education and appreciation for the KRNCA.

Social Setting

Provide for types and levels of recreational use that can be physically accommodated by on-site facilities without causing undue conflicts with other recreational users and local residents and without degrading the recreational facilities and surrounding landscape.

Visitors are expected to practice a level of personal responsibility in following management guidelines and regulations to protect the area and respect the rights of others.

Management Presence

Management actions will occur mainly on-site although information concerning recreation opportunities will be available for people before arriving in Shelter Cove. Management actions will inform visitors of recreational opportunities, safety concerns, and regulations designed to protect the natural and cultural resources in the area.

Management presence on-site is more apparent than in the backcountry, with regular patrols of day use facilities and Black Sands Beach trailhead by law enforcement rangers, maintenance personnel, and other staff members responsible for updating kiosk information, monitoring visitor use, and other tasks. There will be a greater focus on guided activities (i.e., interpretive walks, environmental education programs, etc.) in this zone.

Allowable Uses

Group picnicking and events such as weddings, memorial services, etc. sightseeing, picnicking, environmental education, wildlife viewing, tidepool exploration, staging for backcountry use, and other activities compatible with the management goal and objectives for this zone.

Management Actions

Actions proposed to achieve zone management objectives include permit systems, developing facilities to accommodate visitor needs and resource protection, signing and interpretive information, visitor use and facility condition monitoring, and facility patrols and maintenance. Specific actions are detailed below:

Visitor Use Management

a) Visitor Capacity. Although the major emphasis of the proposed visitor use allocation system within the King Range will be in the Backcountry Zone, maximum numbers of people permitted for group use

of Mal Coombs Park (and possibly Abalone Point and Seal Rock on a case-by-case basis) will be determined based on the physical capacity of the sites with permit stipulations designed to minimize conflicts with nearby residents and other public land users.

Facility Development

Recreational and interpretive facilities will be developed, as required, to accommodate growing visitation, public need for information and education and staging facilities for recreational activities. Facilities will be installed to provide adequate day use recreational opportunities and overnight parking for backcountry users consistent with maintaining an overall natural, aesthetically pleasing landscape. Potential facilities include, but are not limited to:

1. Develop and maintain Mal Coombs Park including:
 - Upgrade and improve the restroom to ensure adequate provisions for persons with disabilities and accommodate heavy seasonal use.
 - Develop a group use area (and group use policy) for weddings, memorials, picnics, etc.
 - Work cooperatively with the Cape Mendocino Lighthouse Preservation Society, the Shelter Cove Pioneers, and other local groups to maintain the Lighthouse, memorials, and other approved joint community projects to develop and maintain such facilities in an aesthetically pleasing and well maintained standard.
 - Upgrade the parking area to expand and make more efficient use of available space.
 - Evaluate proposed additional projects (such as a children's playground) on a case-by-case basis to ensure that they maintain the scenic coastal environment and are consistent with the overall theme and ambience of the park.
 - Maintain existing pedestrian access to tidepools. Provide information and interpretation for tidepool ecology and the need to preserve tidepool diversity.
2. Maintain existing Black Sands Beach parking facility. Improve landscaping, views from overlook, and visitor safety along cliff. Locate additional sites, if feasible and as opportunities arise, to include additional vehicle parking and parking for horse trailers. This may include the purchase of an additional nearby lot, or working with Humboldt County and Shelter Cove Resort Improvement District to improve parking access along Humboldt Loop road, or other options. Maintain extensive visitor information kiosks. Require commercial groups to camp at least ¼ mile from Black Sands Beach trailhead and individuals and non-commercial groups to camp north of Telegraph Creek.
3. Maintain Seal Rock and Abalone Point areas for individual and small group day use. Provide opportunities for picnicking, wildlife viewing, interpretation, and other compatible recreational and educational activities. Allow group use events on a case-by-case basis if such use does not result in resource damage or impacts to nearby residents.

Trails

Maintain wheelchair accessible trail in Mal Coombs Park to provide access between facilities (restroom, Mario's statue, Lighthouse, picnic areas, interpretive signs, parking area, etc.). Provide safe and adequate beach access trail at Black Sands Beach trailhead.

Signage and Interpretation

Adequate signs and interpretive information will be installed and maintained to provide for visitor orientation, safety, and education, and to promote resource protection. All signs and interpretive structures will be installed to meet safety requirements, provide consistency by sign type, and to be as aesthetically pleasing as possible. Proposed actions include, but are not limited to:

- Provide directional signs at key locations along Shelter Cove Road.
- Provide adequate identification, visitor safety, and regulatory signs, as needed, at facilities.
- Provide adequate visitor information in kiosks at Black Sands Beach and Mal Coombs Park.
- Provide interpretive signs or panels at key locations such as Seal Rock, Mal Coombs Park overlooking the tidepools, and other educational features.

Monitoring

Although monitoring efforts will be focused primarily within the Backcountry Zone, some monitoring of the Residential Zone is necessary to determine visitor use levels, vandalism, or deterioration of recreational facilities, potential visitor safety problems, and resource damage. Monitoring of visitor use will be conducted by use of traffic counters, counting vehicles parked at Black Sands Beach trailhead, Lighthouse visitation data, observation sheets and patrol logs, and direct visitor contact.

Special Use and Use Areas

Specific areas and sites may be identified as special use areas to accommodate specific visitor needs. Development of a group use area in Mal Coombs Park will accommodate desired group events not available or as desirable at other BLM locations. Non-traditional and newly emerging recreational uses will be allowed as long as they are consistent with the zone management objectives. Such uses will be monitored to assess potential conflicts, impacts to sensitive resources, or visitor safety issues.

3.18.6 Alternative D

3.18.6.1 *Alternative D: Backcountry Zone*

Management Goal

Provide high quality non-motorized recreational opportunities. Preserve the area's unique character and identity as one of the few remaining coastal backcountry recreation areas in the U.S. Allow for levels of predominantly self directing recreational use that protect the overall diverse scenic and natural resources while imposing relatively minimal constraints on the visitor.

Objectives

Physical Setting/Facilities

Maintain an overall naturally appearing landscape, with the sights, sounds, and forces of nature being the predominant physical features and sensations that visitors experience. The works and impacts of humans are subordinate to the primitive nature of the landscape.

Maintain a comprehensive network of backcountry trails and directional signing. Other facilities will provide for enhanced visitor safety (commensurate with the backcountry setting) and resource protection.

Social Setting

Provide for levels of use that allow for moderate numbers of encounters between visitors throughout the year. Levels of use will be allowed to the extent that they do not result in substantial resource impacts.

Visitors are expected to practice a level of personal responsibility and self-sufficiency commensurate with a self-directed backcountry experience.

Management Presence

Substantial management actions will occur both on-site and off-site so that visitors can experience the maximum freedom to choose travel and camping locations. Management actions will prepare visitors to enter and use the backcountry safely and with minimal impacts to resources and other visitors.

Management presence on-site is fairly substantial, with moderate levels of direct visitor contact by BLM backcountry and law enforcement rangers.

Allowable Uses

Non motorized recreation activities including hiking, backpacking, surfing, surf fishing, equestrian use, camping, environmental education, wildlife viewing, and other activities consistent with the goal of emphasizing backcountry experiences. Allow for both commercial and non-commercial non-motorized recreational use, if consistent with zone objectives, through established permitting procedures.

Management Actions

Actions proposed to achieve zone management objectives include permit systems, facility development, maintaining a trail system, signing and interpretive information, visitor use, and resource monitoring, and identification of special management areas. Specific actions are detailed below.

Visitor Use Management

a) Use Allocation. Within five years of plan completion, a comprehensive visitor use allocation system will manage anticipated increasing visitor numbers, particularly along the Lost Coast Trail. Under this alternative, this system will be designed to emphasize prevention of unacceptable resource impacts rather than promoting high quality opportunities for solitude. The visitor use allocation system will attempt to redistribute use to off-peak periods as one means to reduce resource impacts.

Visitor use allocation will be based on existing and projected visitor use numbers and measurable resource impacts. This use allocation system is an adaptive strategy that will progress, as needed and based upon monitoring information, from limits on commercial groups during popular holiday weekends (currently being implemented), to permitting all users within established limits on popular holiday weekends, to high-use season permits, to year round permits, as future increases in visitation necessitate. The visitor use permit system will include, at a minimum, the following components:

1. Range of allowable visitor numbers within the Backcountry Zone as a whole, along the 25 mile Lost Coast Trail, and from each trailhead.
2. Percentage of visitor use allowed by commercial groups, non-commercial organized groups, and private parties.
3. Maximum allowable group size limits along the Lost Coast Trail and on the upland trails.
4. Permit system administration to include:
 - Who requires a permit (i.e., commercial groups, non-commercial groups, all overnight users, and/or day users?)
 - When permits are required (i.e., major holiday weekends, summer season, or other times of the year?)
 - Where and how people may obtain permits
 - Fee schedule
 - Information to disseminate (i.e., fire restrictions, bear canister requirement, proper sanitation practices, etc.)
5. Indicators of change will be identified to monitor and implement use allocation strategies. These indicators include: visitation increases, activity preference shifts (including boat use at Big Flat), new technologies, changes in commercial use (i.e., outfitter and guide service), economic factors, demographic shifts, and levels of resource impacts.
6. In response to immediate concerns over increasing visitation, the following interim actions are being implemented prior to completion of the use permitting plan:
 - The existing requirement of no more than 25 people (organized group use only) leaving from each trailhead will be increased to 45 people to accommodate three groups having the maximum of fifteen group members;
 - Upland trail use limit will be increased to fifteen maximum to allow upland trail camping, particularly for those groups combining use of both the upland trail and Lost Coast trail sections. Upland trail backcountry campsites will be expanded, as necessary, to accommodate such groups.
 - Interim Permit System: An interim permit system will be implemented to ensure better information dispersal to the public and to improve visitor use statistics for inclusion in developing the visitor use allocation plan.
 - Group Use Areas: Organized groups and commercial outfitters will be directed to specific locations that can accommodate larger groups without overwhelming the campsite capacity

and diminishing the quality of the backcountry experience at other locations. Management of these areas will be an integral part of the visitor use allocation plan with adaptive strategies of reducing resource and social impacts on sensitive, less spacious locations. Initially identified group use areas include the following (other areas may be identified as needed):

1. Big Flat/Miller Flat: As an interim policy until the visitor use allocation plan is completed, require permitted groups having multiple layover days to camp at Big Flat/Miller and encourage all permitted groups to camp here instead of Shipman Creek or Buck Creek. Inform the general public that there are ample camping locations here, but that during busy times their opportunities for solitude may be reduced.
2. Spanish Flat: Due to its expansive area, presence of several water sources, and numerous camping locations above the tidal zone, Spanish Flat has been identified as a second location to focus organized group camping. Group camping along Spanish Flat will be promoted over other, less spacious locations in the interim until more specific management guidance is developed in the visitor use allocation plan.

Under this alternative, increased numbers of visitors will be accommodated as long as the natural and cultural resources in the area are adequately protected. Less emphasis would be placed on providing quality opportunities for solitude, particularly during the heavy use season. Establishing a permit system would be a last resort after other management actions have been implemented. This will allow for fewer constraints on the visitor, greater freedom of access, as well as lower administration costs due to delayed implementation of a use allocation system. The concept of managing specific areas within the Backcountry Zone for higher use is an attempt to accommodate organized groups and meet increasing visitor demand while providing some opportunities for solitude. Big Flat, in particular, can accommodate higher use levels due its spacious setting, higher level of existing development (i.e., private dwelling, airstrip, and driftwood shelters), an abundance of suitable campsites, and its popularity as a recreational destination for a wider range of recreational visitors. Spanish Flat is also very spacious and can more easily accommodate higher use levels.

b) Visitor Use Fees. A nominal fee would be charged for overnight backcountry use. No fees would be charged for day use. All fees would be reinvested into management and protection of backcountry resources, providing maintenance, and visitor services.

c) Hunting Season. Coordinate with CDFG to determine the feasibility of changing the hunting season for the King Range to begin after Labor Day weekend. This would serve to reduce conflicts and potential safety concerns during the holiday weekend.

d) Special Use Management. Non-traditional and newly emerging recreational uses will be allowed as long as they are consistent with the zone management goals. Such uses (i.e., geocaching, paragliding, etc.) will be monitored to assess potential conflicts, impacts to sensitive resources, or visitor safety issues. These uses will be managed to ensure that the primary objectives of the Backcountry Zone are achieved.

1. Mountain bike use: Mountain biking will be treated as a special use in this zone. Mountain bike use will be allowed on existing trails in the backcountry, but will not be encouraged or promoted based on the area's Wilderness Study Area status. Prohibit mountain bike use on new trails

(including the Chinquapin Trail and Horse Mountain Creek Trail) inside the Wilderness Study Area (WSA), to meet official BLM policy.

2. Motorized watercraft landings: The shore landings of motorized watercraft, including boats, zodiacs, jet skis, and other craft powered with internal combustion engines would be managed under the visitor use allocation program to minimize conflicts with other backcountry users. Emergency landings would not be affected.

Unforeseen changes in recreational uses, patterns, and technologies force us to remain flexible and adaptive in managing such emerging uses. Within the goal of managing the Backcountry Zone to protect its primitive, non-motorized, more self directing recreation opportunities, the BLM will try to allow new or expanded activities (such as geo-caching) as long as they do not unduly interfere with visitor safety, resource protection or conflict with other recreational pursuits.

Facility Development

Backcountry facilities will be developed as required to provide a level of visitor safety commensurate with a self directed, coastal backcountry wilderness experience for resource protection. Proposed actions include, but are not limited to:

1. Provide adequate backcountry campsites along the upland trails by expanding existing campsites and developing additional sites at strategic locations, where feasible, to accommodate increasing visitor use.
2. Install visually unobtrusive bear proof food storage facility (such as bear lockers or hanging wires) at popular heavy use locations along the coast, particularly those with a history of persistent bear encounters.
3. Install rustic, low maintenance backcountry toilets at popular sites where monitoring indicates substantial resource impacts or persistent sanitation problems. Any potential backcountry toilets would be constructed of natural materials and maintained through the use of minimum tools commensurate with the primitive, backcountry setting of the Lost Coast.
4. Evaluate existing structures like fences, buildings, etc. case-by-case (after addressing cultural and natural resource concerns and management use needs) to determine which can be removed or kept.
5. Construct or maintain fences and barriers where necessary to protect sensitive natural or cultural areas.
6. Develop springs for potable water sources, where feasible, near existing or future backcountry campsites on the upland trails. Water is generally not a problem on the beach campsites.
7. Consider establishing a rustic backcountry ranger station along the coast for emergency services and information dispersal.

Providing adequate backcountry campsites and water sources, where feasible and appropriate, will accommodate increasing visitor use and better spread out such use to help provide opportunities for solitude and primitive recreation. Providing backcountry toilets and bear-proof food storage containers will be necessary to reduce sanitation problems at major backcountry campsites, particularly along the

Lost Coast, protect visitors from adverse wildlife encounters, particularly with bears, and help protect wildlife. Evaluating facilities present (i.e., fences, remains of former structures, etc.) will help reduce the man-made visual impacts in the backcountry while retaining those needed for resource protection or having historical significance. Establishment of a backcountry ranger station will allow for extended presence in the backcountry, and provide a central location for visitor information to the higher number of users anticipated under this alternative.

Trails

Maintain a comprehensive network of backcountry trails for primitive and predominantly self-directed hiking/backpacking and equestrian use to offer a diversity of backcountry use opportunities and promote visitor safety and resource protection. Proposed actions include but are not limited to:

1. Work with equestrian groups to identify and prioritize “horse friendly” trails in the King Range. Improve these trails to remove/reduce barriers to horse access (i.e., provide horse passes at vehicle barriers, improve trailheads, reroute problem trail segments where possible, etc.). Maintain trails to equestrian standards, when possible, and identify additional trails suitable for equestrian use.
2. Develop springs for potable water sources where feasible at appropriate intervals near upland trails. Construct side trails, as necessary, to provide access to such water sources.
3. Develop additional trails, as needed, to complement existing trail system. Identify opportunities to provide easier level of trail access for a wider range of backcountry trail users. Identified trails include extending the Miller Loop Trail to the Lightning Trailhead, and establishing a trail up Mill Creek to the Cooskie Creek Trail. Evaluate future trail opportunities along some of the major coastal drainages such as Cooskie Creek (connecting Cooskie Creek trail to the coast at the mouth of the creek), Spanish Creek, Big Creek, Big Flat Creek (beyond existing Rattlesnake Ridge trail), Shipman Creek, and Gitchell Creek.
4. Provide a consistent standard of trail maintenance for all backcountry trails through the use of volunteers, work groups such as the California Conservation Corps, and BLM employees.
5. Develop a wheelchair accessible interpretive trail in Hidden Valley with expanded parking and adequate information at the Hidden Valley Trailhead.

Much of the visitor use within the backcountry depends on an adequate trail system to provide self directed primitive recreational opportunities. The existing trail network provides a comprehensive linkage between the Lost Coast trail and upland trails. Connecting Miller Camp to the Lightning Trailhead would provide a quality loop trail opportunity while developing a trail up Mill Creek from Lighthouse road to the Cooskie Creek Trail would also expand the upland trail opportunities. Public scoping input identified the need to provide easier trails for a wider range of abilities. A wheelchair accessible interpretive trail in Hidden Valley would accommodate those wanting an easier trail as well as increasing our Universally Accessible trail opportunities. Expanding the coastal trail system up some of the larger creek drainages would increase easier hiking opportunities, and help disperse recreational use to better accommodate increasing visitation. Finally, this alternative strives to ensure that trail conditions are maintained to accommodate a wider spectrum of non-motorized trail users.

Signage and Interpretation

Rustic backcountry signs and interpretive information will be installed and maintained, as required to provide for visitor safety and resource protection. All signs and interpretive structures will be aesthetically pleasing (i.e., natural wood routed signs rather than metal) with consistent style by sign type. Proposed actions include but are not limited to:

1. Provide directional signs at all trail junctions.
2. Install identification signs, where necessary, to post private land boundaries to help prevent trespass onto private lands.
3. Install identification signs, where necessary, to point out backcountry campsites, restrooms, bear-proof food storage facilities, water sources, sensitive resource areas, or other important features.
4. Provide rustic interpretive signs for public education and site protection for important features.
5. Install sign boards or mini-kiosks at major camping areas and backcountry ranger station to highlight major regulations, safety hazards, and minimum impact camping techniques.

Adequate signing is critical to ensure that visitors are aware of backcountry trail opportunities. Signs also reduce the chance of visitors getting lost, trespassing onto private land, suffering health risks (such as drinking untreated water from developed water sources), or damaging sensitive natural or cultural resources. Providing informational and regulatory signs at major use areas will reinforce the rules necessary to minimize impacts from an anticipated higher level of visitor use under this alternative. Providing important interpretive messages at a few key locations will help protect sensitive resources through enhanced visitor awareness.

Monitoring

Conduct an ongoing comprehensive monitoring program to determine impacts from recreational use on natural and cultural resources in the backcountry, assess social impacts of changing visitor use, to make necessary adjustments to the visitor use permitting program, and to achieve zone management objectives. The monitoring program will include the following

1. Collection of visitor use statistics, particularly along the more heavily used sections of the backcountry, most notably the Lost Coast Trail. This will be accomplished through trailhead registers, traffic counters, patrol logs (counting cars at parking areas as well as backcountry users), Special Recreation Permit information, and correspondence with visitors.
2. Collection of resource impact information, particularly along trails and campsites. This would include campsite inventory, evaluation of human and stock impacts on vegetation, soils, freshwater, etc. as well as identifying resource problems like sanitation, litter, proliferation of fire rings, etc. Separate monitoring of resources such as cultural sites, invasive plants, water quality, etc. will also be conducted as needed by resource specialists.
3. Survey of visitor preferences and experiences. This survey should be conducted approximately every five years or as needed to determine trends in visitor enjoyment of the area and changes in social impacts from projected increases in future visitor use. This survey should involve an

aggressive approach to acquiring information with the highest level of statistical reliability possible. This survey will also improve our visitor use data.

4. Evaluation (through contact with visitors, written responses at trailhead registers, visitor surveys, on site observations, etc.) of significant changes in activity preferences, new technologies, commercial interest, and economic, demographic, and environmental conditions.

Implementation and continuance of an effective monitoring program is essential to development, if necessary, of the visitor use allocation program as well as keeping abreast of overall trends in user interests, preferences, satisfaction, and types of use.

3.18.6.2 *Alternative D: Frontcountry Zone*

Management Goal

Provide a mix of motorized and non-motorized recreational experiences. Allow recreational facilities and vehicular access for camping, day use, and backcountry trailhead access at a level which maintains a high visual quality of the area and protects the area's natural resources. Manage for a variety of recreational activities to complement the primitive recreational opportunities in the Backcountry Zone.

Objectives

Physical Setting/Facilities

Maintain a predominantly naturally appearing landscape with visitor access provided through an adequate network of roads and trails.

Maintain a system of on-site facilities to allow visitors opportunities for camping, day use and trailhead access to the backcountry trail system. Provide adequate signing and informational facilities to provide the visitor with the directional, interpretive, and regulatory information necessary to enhance their recreational experiences and protect important natural and cultural resources in the area.

Social Setting

Provide for types and levels of recreational use that provide less rugged, primitive opportunities emphasized within the primitive Backcountry Zone. The Frontcountry Zone will also provide visitors choices in where they may access the Backcountry Zone.

Visitors are expected to practice a level of personal responsibility in following management guidelines and regulations to protect the natural and cultural resources in the area as well as the recreational facilities, and respect the rights of other recreationists and local residents.

Management Presence

Management actions will occur both on-site and off-site so visitors can experience a mix of personal freedom and security. Management actions will inform visitors of recreational opportunities, safety concerns, and regulations designed to protect the natural and cultural resources in the area.

Management presence on-site is more apparent than in the backcountry, with regular patrols of campgrounds (including fee collections), day use facilities, trailheads, etc. by law enforcement rangers, maintenance and fire control personnel, and other staff members responsible for updating kiosk information, monitoring visitor use, and other tasks.

Allowable Uses

A mix of motorized and non-motorized recreational uses including car camping, driving for pleasure, hiking, mountain biking, equestrian use, hunting, fishing (restricted to certain areas), nature study, wildlife viewing, and other activities compatible with the management objectives for this zone. Emphasize recreational uses less available in the Backcountry Zone. Allow for both commercial and non-commercial recreational use, if appropriate to meet zone objectives, through established permitting procedures.

Management Actions

Actions proposed to achieve zone management objectives include developing facilities to accommodate visitor needs and resource protection, maintaining a road and trail system, signing and interpretive information, visitor use and resource monitoring, and facility patrols and maintenance. Specific actions are detailed below:

Visitor Use Capacity

The visitor use allocation strategy described in the Backcountry Zone will apply to the Lost Coast segment between Mattole camp and the Punta Gorda Lighthouse. Although the major emphasis of the proposed visitor use allocation system within the King Range will be in the Backcountry Zone, maximum numbers of people and stock will be determined for each developed facility in the Frontcountry Zone, most notably campgrounds. If existing facilities are expanded or new ones constructed, changes in allowable use will be made. Maximum numbers of people per campsite (presently eight per site), group size limitations for reserved campgrounds (such as Nadelos, present maximum sixty people) and allowable numbers and locations of stock use will be determined site by site.

Facility Development

Adequate recreation facilities will be developed as required to meet the minimal needs of visitors to the King Range, to protect resources, and to promote visitor safety and knowledge of the area. Facilities will be installed to provide adequate overnight and day use recreational opportunities consistent with maintaining an overall natural, aesthetically pleasing landscape. Potential facilities include, but are not limited to:

1. Pursue possible trailhead along Bear Creek a short distance up the former road just north of the Shelter Cove road/Chemise Mountain Road intersection.
2. Provide and maintain trailhead facilities including parking and informational kiosks at all trailheads. Expand trailhead parking, where needed.
3. Maintain existing campgrounds at Nadelos, Wailaki, Tolkan, Horse Mountain, and Honeydew. Provide drinking water, where possible, at all campgrounds. Upgrade Horse Mountain

Campground to meet modern, Universally Accessibility standards. Tie in expanded mountain bike road/trail system (see trail section) to Horse Mountain Campground and promote this campground for mountain bike use. Expand campgrounds, if needed in the future, to accommodate increasing visitor use. Where feasible, ensure that restrooms and other facilities are retrofitted to best meet Universal Accessibility standards.

4. Expand and upgrade Mattole Campground to better delineate individual camping units and provide for maximum degree of Universal Accessibility. Ensure good source of drinking water and adequate parking for backcountry users. Develop a group camping and overflow camping area along the Mattole River close to the existing campground.
5. Provide small overlook/picnic sites at scenic view points such as along Saddle Mountain and Paradise Ridge Roads.
6. Maintain visitor information and interpretive center at the BLM office in Whitethorn. Extend visitor hours during high use periods to better accommodate visitors.
7. Stabilize and maintain the Punta Gorda Lighthouse and adjacent storage building for preservation as an historical landmark and interpretive site.

The major objectives of the Frontcountry Zone are to provide access to the Backcountry Zone, to encourage certain recreational uses which may not be possible or allowed in the Backcountry Zone, and to accommodate basic visitor needs. To accomplish these goals, a sufficient number and quality of developed campgrounds, day use and overnight parking facilities, and trailheads are necessary.

Trails

Establish and maintain a network of trails connecting to the Backcountry Zone trails and for use in the frontcountry. Emphasize recreational uses that are less available in the Backcountry Zone. Emphasize lower difficulty hiking use and interpretive/environmental education use for frontcountry trails to complement the more rugged network of Backcountry Zone trails. Specific actions proposed may include but are not limited to:

1. Develop additional trails, as needed, to complement existing trail system. Identify opportunities to provide easier level of trail access for a wider range of backcountry trail users. Establish loop trail opportunities for mountain bikes and equestrian use, linking Paradise Ridge Road to King Peak Road, possibly via the old Queen Peak Road and/or other locations, and tie in this trail system to Horse Mountain and/or Tolkán Campgrounds.
2. Improve trail linking the northern portion of the Lost Coast Trail with the Chemise Mountain/Sinkyone portion of the trail, if feasible.
3. Expand and improve interpretive trail between Wailaki and Nadelos Campgrounds by developing a loop trail and making the entire loop trail wheelchair accessible.
4. Re-establish trail from Tolkán Campground to Bear Creek.
5. Provide adequate trail maintenance and barriers against illegal OHV use while still providing horse passes for equestrian use.

Trails within the Frontcountry Zone are envisioned somewhat differently than backcountry trails. This is due to 1) the rugged, often steep nature of the backcountry trail system and the identified need expressed in public scoping input for lower gradient, easier trails; 2) The possible future exclusion of mountain bikes from areas designated in the future as wilderness; and 3) the identification of the need for easy, accessible, interpretive trails. Accommodating these needs as well as linking up major components of the backcountry trail system will enhance the overall trail system in the King Range and provide trail opportunities for a wider range of visitors.

Signage and Interpretation

Adequate frontcountry signs and interpretive information will be installed and maintained to provide for visitor orientation, safety, and education, and to promote resource protection. All signs and interpretive structures will be installed to meet safety requirements, provide consistency by sign type, and to be as aesthetically pleasing as possible. Proposed actions include, but are not limited to:

1. Provide directional signs at all road junctions, trailheads, and trail junctions.
2. Provide adequate visitor safety and regulatory signs, as needed, along roads and at trailheads, campgrounds, and other facilities.
3. Provide signs, where necessary, to identify private land boundaries and roads closed to public use.
4. Provide signing, where necessary, to identify water sources, sensitive resource areas, or other important features.
5. Provide interpretive signs or panels, where feasible, at key locations such as along the interpretive trail between Nadelos and Wailaki Campgrounds, at the Punta Gorda Lighthouse, and at a representative, important archaeological site near Mattole Campground.

Adequate directional signing is critical to ensure that visitors can find BLM roads and facilities without getting lost, trespassing onto private property, or traveling off legally designated roads. Safety and regulatory signs are equally important to ensure compliance with important rules such as seasonal campfire prohibitions, mandatory use of bear canisters, and protection of sensitive areas. Interpretive signing at key locations can enhance visitor knowledge and enjoyment of the area while hopefully promoting responsible stewardship of the area.

Monitoring

Coastal monitoring efforts described for the Backcountry Zone will be conducted along the segment of beach between Mattole trailhead and the Punta Gorda Lighthouse. Although monitoring efforts will be focused primarily within the Backcountry Zone, some monitoring of the Frontcountry Zone is necessary to determine visitor use levels, vandalism, or deterioration of recreational facilities, potential visitor safety problems, and resource damage. Monitoring of visitor use will be conducted by use of traffic counters, counting vehicles parked at trailheads, campground fee collection information, observation sheets, patrol logs, and direct visitor contact.

Designation of Special Use and Use Areas

Specific areas may be designated as special use areas to accommodate specific visitor needs such as equestrian camping. Nadelos Campground may be reserved for group use under special permit. Non-traditional and newly emerging recreational uses will be allowed as long as they are consistent with the zone management objectives. Such uses will be monitored to assess potential conflicts, impacts to sensitive resources, or visitor safety issues.

3.18.6.3 *Alternative D: Residential Zone*

Management Goal

Direct recreation visitors to and focus impacts on public land instead of private lands in the Shelter Cove area. Provide more developed opportunities for group gatherings and individual use while still maintaining open space and scenic quality of the area. Provide visitor information, interpretation, and environmental education programs.

Objectives

Physical Setting/Facilities

Complement the development of Shelter Cove by maintaining some open space and protecting the unobstructed scenic ocean views at select locations.

Maintain a system of on-site day use and overnight parking facilities to allow visitors access to the beach and tidepools, provide more developed recreation opportunities, and provide information and interpretive resources to promote environmental education and appreciation for the KRNCA.

Social Setting

Provide for types and levels of recreational use that can be physically accommodated by on-site facilities without causing undue conflicts with other recreational users and local residents and without degrading the recreational facilities and surrounding landscape.

Visitors are expected to practice a level of personal responsibility in following management guidelines and regulations to protect the area and respect the rights of others.

Management Presence

Management actions will occur mainly on-site although information concerning recreation opportunities will be available for people before arriving in Shelter Cove. Management actions will inform visitors of recreational opportunities, safety concerns, and regulations designed to protect the natural and cultural resources in the area.

Management presence on-site is more apparent than in the backcountry, with regular patrols of day use facilities and Black Sands Beach trailhead by law enforcement rangers, maintenance personnel, and other staff members responsible for updating kiosk information, monitoring visitor use, and other tasks.

Allowable Uses

Group picnicking and events such as weddings, memorial services, etc. sightseeing, picnicking, environmental education, wildlife viewing, staging for backcountry use, and other activities compatible with the management goal and objectives for this zone.

Management Actions

Actions proposed to achieve zone management objectives include permit systems, developing facilities to accommodate visitor needs and resource protection, signing and interpretive information, visitor use and facility condition monitoring, and facility patrols and maintenance. Specific actions are detailed below:

Visitor Use Capacity

Although the major emphasis of the proposed visitor use allocation system within the King Range will be in the Backcountry Zone, maximum numbers of people permitted for group use of Mal Coombs Park (and possibly Abalone Point and Seal Rock on a case-by-case basis) will be determined.

Facility Development

Adequate recreational and interpretive facilities will be developed, as required, to accommodate growing visitation, public need for information and education and staging facilities for recreational activities. Facilities will be installed to provide adequate day use recreational opportunities and overnight parking for backcountry users consistent with maintaining an overall natural, aesthetically pleasing landscape. Proposed actions include, but are not limited to:

1. Develop and maintain Mal Coombs Park including:
 - Upgrade and improve the restroom to ensure adequate provisions for persons with disabilities and accommodate heavy seasonal use.
 - Develop a group use area (and group use policy) for weddings, memorials, picnics, etc.
 - Work cooperatively with the Cape Mendocino Lighthouse Preservation Society, the Shelter Cove Pioneers, and other local groups to maintain the Lighthouse, memorials, and other approved joint community projects to develop and maintain such facilities in an aesthetically pleasing and well maintained standard.
 - Upgrade the parking area to expand and make more efficient use of available space.
 - Evaluate proposed additional projects (such as a children's playground) on a case-by-case basis to ensure that they do not conflict with other proposed projects and provide adequate visitor safety.
 - Maintain existing pedestrian access to tidepools. Provide information and interpretation for tidepool ecology and the need to preserve tidepool diversity.
2. Maintain existing Black Sands Beach parking facility. Improve landscaping, views from overlook, and visitor safety along cliff. Actively pursue all opportunities to expand facility to include additional parking and parking for horse trailers. This may include the purchase of an

additional nearby lot(s), or working with Humboldt County and Shelter Cove Resort Improvement District to improve parking access along Humboldt Loop Road, or other options. Maintain extensive visitor information kiosks.

3. Maintain Seal Rock and Abalone Point areas for individual and small group day use. Provide opportunities for picnicking, wildlife viewing, interpretation, and other compatible recreational and educational activities. Allow group use events on a case-by-case basis if such use does not result in resource damage or impacts to nearby residents.

Trails

Maintain wheelchair accessible trail in Mal Coombs Park to provide designated access between facilities (restroom, Mario's statue, Lighthouse, picnic areas, interpretive signs, parking area, etc.). Provide safe and adequate beach access trail at Black Sands Beach trailhead.

Signage and Interpretation

Adequate signs and interpretive information will be installed and maintained to provide for visitor orientation, safety, and education, and to promote resource protection. All signs and interpretive structures will be installed to meet safety requirements, provide consistency by sign type, and to be as aesthetically pleasing as possible. Proposed actions include, but are not limited to:

- Provide directional signs at key locations along Shelter Cove Road.
- Provide adequate identification, visitor safety, and regulatory signs, as needed, at facilities.
- Provide adequate visitor information in kiosks at Black Sands Beach and Mal Coombs Park.
- Provide interpretive signs or panels at key locations such as Black Sands Beach, Seal Rock, Mal Coombs Park overlooking the tidepools, and other educational features.

Monitoring

Although monitoring efforts will be focused primarily within the Backcountry Zone, some monitoring of the Residential Zone is necessary to determine visitor use levels, vandalism, or deterioration of recreational facilities, potential visitor safety problems, and resource damage. Monitoring of visitor use will be conducted by use of traffic counters, counting vehicles parked at Black Sands Beach trailhead, Lighthouse visitation data, observation sheets and patrol logs, and direct visitor contact.

Designation of Special Use and Use Areas

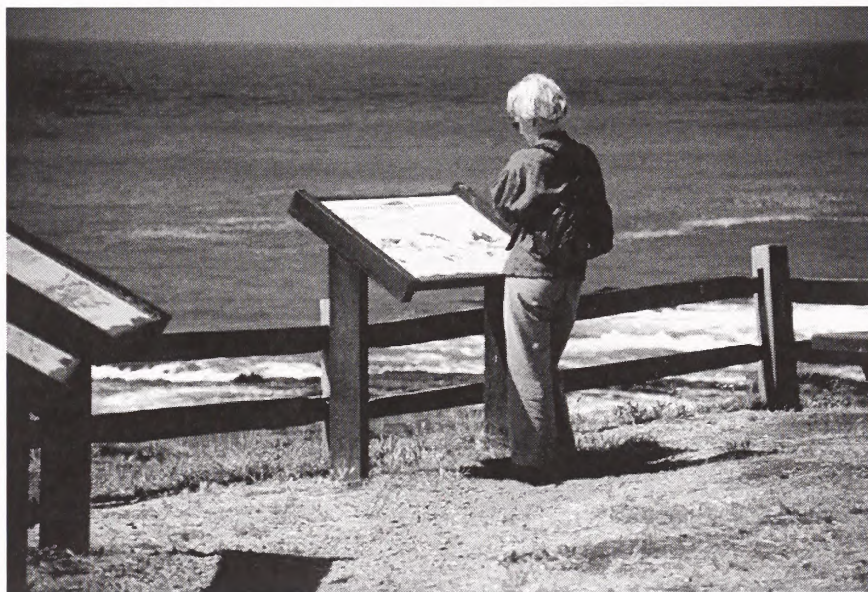
Specific areas may be designated as special use areas to accommodate specific visitor needs. Development of a group use area in Mal Coombs Park will accommodate desired group events not available or as desirable at other BLM locations. Non-traditional and newly emerging recreational uses will be allowed as long as they are consistent with the zone management objectives. Such uses will be monitored to assess potential conflicts, impacts to sensitive resources, or visitor safety issues.

3.19 INTERPRETATION AND EDUCATION

3.19.1 Introduction

The interpretive and educational programs in the King Range currently revolve around several major themes:

- Dynamic physical processes continue to shape the rugged isolation of the KRNCA coastline, which in turn, have created the area's special cultural and natural resource values.
- The BLM manages the KRNCA to maintain the area's undeveloped character and to protect and enhance resource values while providing a diversity of recreation opportunities for the public.
- The King Range is a very dynamic and fragile area (i.e., weather is very variable and can change rapidly, how the tides affect the beach hike, how humans impact the tidepools and other habitats).
- The King Range is located in the rural region of Southern Humboldt County. Visitors will be encouraged to travel in the area in a way that is respectful to the neighborhood.
- People will be encouraged to get to know and respect the wild, untamed character of the land and to experience the King Range on nature's terms.



The BLM would continue to place interpretive exhibits at popular developed sites.

A vibrant and effective interpretation and education program has already been built around these themes, and so the plan seeks to continue implementing this program. As a result, the management goals, objectives, and actions are common across all alternatives, following the “no action” continuation of current management.

3.19.2 Common to All Alternatives

3.19.2.1 *Goals*

- To provide current, accurate, and descriptive information to visitors that facilitates a safe, enjoyable trip to the King Range while minimizing negative impacts on resources and surrounding communities.
- Engage children and adults in learning about the cultural and natural history of the King Range and encourage stewardship of these lands.

Rationale

People that are well informed of what to expect when they come to the King Range are more likely to achieve their recreational goals and are more likely to leave less of an impact on the resources and communities.

The overall mission of the field of interpretation and environmental education is to inspire a sense of connection with the natural world and an appreciation for other cultures. It is through these connections that a sense of respect for and stewardship of these resources will likely arise.

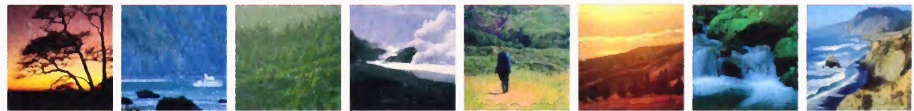
3.19.2.2 *Objectives*

1. Provide information through a variety of formats and venues to assist potential visitors in planning a trip to the King Range.
 - Provide specific descriptive information on area road conditions (including narrowness, steepness of grades etc.), facilities, and recreation opportunities so that potential visitors can determine if the King Range offers the right “fit” for their recreation needs. This will reduce the number of visitors who access the area that are not prepared for the remote rugged nature of the Lost Coast.
 - Provide detailed orientation information to permitted groups and to visitors seeking information about the King Range (i.e., “Lost Coast Adventure” video, website, brochure).
 - Coordinate with local chambers of commerce, parks, and other information centers or organizations to provide updated information on changing conditions such as road/trail status on a regular basis.
 - Coordinate with organized outdoor groups and retail stores to provide updated information to them.
 - Participate in offsite presentations about low impact camping in the King Range to interested groups (CCCs, high schools, boy scouts).
2. Provide sufficient safety and orientation information to visitors before they enter the backcountry.
 - Maintain information kiosks at trailheads and campgrounds to provide adequate information on recreation facilities and opportunities in the King Range.

- Maintain adequate signing on roads and at trailheads so that people can distinguish public from private land.
 - Backcountry ranger/interns/staff patrols on the Lost Coast and other trails to respond to information requests.
 - Maintain adequate staffing of the King Range Office front desk in order to respond to requests for special recreation permits and other information needs.
3. Provide support for BLM King Range programs and policies utilizing a variety of outreach approaches.
- Communicate changing conditions and other critical announcements with a wide audience through Public Service Announcements, KRNCA webpage, and other forms of media.
 - Coordinate with resource specialists to identify opportunities to share an aspect of their work with schools kids, locals, and visitors.
 - Use volunteers, wherever possible, to perform tasks.
 - Give guided natural/cultural history programs.
 - Placement of wayside exhibits to interpret resources (i.e., using temporary exhibits to explain a work-in progress such as road removal, interpretive signs at overlooks).
 - Identify projects to enhance the development of the Lost Coast Interpretive Association, such as producing the orientation video, or coordinating tidepool monitoring with the community.
4. Engage children in learning about the King Range by developing curriculum based education opportunities.
- Establish outdoor field school sites/research opportunities and begin to gather baseline data such as monitoring diversity of the tidepools.
 - Encourage stewardship of the King Range by providing opportunities for school credit, volunteerism, and employment (i.e., School to Work program, train young docents, hire students).
 - Coordinate with partners such as Mattole Restoration Council to provide school programs and curriculum related to the King Range.



CHAPTER FOUR : Environmental Consequences



4.0 ENVIRONMENTAL CONSEQUENCES

4.1 INTRODUCTION

This chapter addresses the likely consequences, both beneficial and adverse, to the natural and human environments in the King Range that could result from implementing the alternatives described in Chapter 3. These include short-term and long-term effects, direct and indirect effects, and cumulative effects. Duration, intensity (or magnitude), and context (local, regional, or national effects) of impacts are interpreted where possible. Mitigation measures designed to avoid or reduce impacts were incorporated into the management alternatives, so impacts in this chapter are considered unavoidable and would result from implementing the management actions and mitigation. If impacts are not discussed, analysis has indicated either that none would occur or that their magnitude would be negligible. Only negligible, if any, impacts have been identified for geology and soils, prime and unique farmlands, hazardous materials, lands and realty, interpretation and education, public safety, and waste management. Therefore, these resources are not discussed as stand-alone resource topics. No specific projects are proposed that would have negative impacts on floodplains or wetlands. Individual watershed restoration activities and other projects that affect wetlands/floodplains would undergo a site-specific permitting/NEPA analysis. Because all on-the-ground actions will be subject to a Visual Resources contrast assessment to ensure that they meet the objectives of the Visual Resources Class where they are located, there are also no impacts identified at this time for visual resources. It has been determined that the plan will not have a direct or adverse effect on Wild and Scenic River values, and is therefore in compliance with Section 7 of the Wild and Scenic Rivers Act (Public Law 90-542 and amendments thereto). Thus, Wild and Scenic Rivers values will be discussed only in relation to the rivers/streams studied for eligibility and suitability in the plan. This plan will undergo a specific review by the California Coastal Commission to determine consistency with the California Coastal Act.

4.1.1 Methodology

Impact analyses and conclusions are based on interdisciplinary team knowledge of resources and the project area, reviews of existing literature, and information provided by experts in the BLM and other agencies. The analyses identify both enhancing and improving effects to a resource from a management action, and actions with potential to degrade a resource. Any impacts described in this section are based on the conceptual plan of the alternatives under consideration as described in Chapter 3, and the baseline used for projecting impacts is the current condition or situation described in Chapter 2. The management alternatives have been configured to maximize benefits and minimize adverse effects on both ecosystem function and the human environment. Effects are quantified where possible. In the absence of quantitative data, best professional judgment prevailed; impacts are sometimes described using ranges of potential effects or in qualitative terms, where appropriate.

4.1.2 Impact Terminology

Terms referring to impact intensity, context, and duration are used in the effects analysis. Unless otherwise stated, the standard definitions for these terms are as follows:

- **Negligible:** the impact is at the lower level of detection; there would be no measurable change.

- **Minor:** the impact is slight but detectable; there would be a small change.
- **Moderate:** the impact is readily apparent; there would be a measurable change that could result in a small but permanent change.
- **Major:** the impact is large; there would be a highly noticeable, long-term, or permanent measurable change.
- **Localized impact:** the impact would occur in a specific site or area. When comparing changes to existing conditions, the impacts would be detectable only in the localized area.
- **Short-term effect:** the effect would occur only during or immediately after implementation of the alternative.
- **Long-term effect:** the effect could occur for an extended period after implementation of the alternative. The effect could last several years or more.

4.1.3 Cumulative Impacts

NEPA requires evaluation of a proposed action's potential to contribute to "cumulative" environmental impacts. A cumulative impact is defined as:

The impact on the environment which results from the incremental impact of the action when added to other past, present, or reasonably foreseeable future actions, regardless of what agency or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time. Cumulative impacts can result from similar projects or actions, as well as from projects or actions that have similar impacts (40 CFR 1508.7).

In this case, similar actions external to the King Range could include recreation developments in surrounding State Parks, watershed restoration projects conducted by non-profit groups in other parts of the Mattole, or county plans that allow population growth that would increase traffic levels and visitation.

The objective of cumulative impact analysis is to evaluate the significance of the proposed action's contribution to cumulative environmental impacts. It is accomplished in three steps:

- Step 1: Identify the cumulative impacts study area for each resource evaluated. Unless otherwise indicated, the cumulative impacts study area covers the King Range planning area plus the remainder of the Mattole watershed.
- Step 2: Identify and describe past, present, and reasonably foreseeable future actions in the cumulative impact study area that are similar to the proposed action or have substantial impacts to which the proposed action would contribute.
- Step 3: Evaluate the potential for the proposed action to have a substantial contribution to cumulative environmental impacts with the potential to significantly affect the environment.

The timeframe for the cumulative impact analysis begins at the anticipated time that this RMP will first take effect, in 2005, and extends for the twenty-year life of the plan to 2025. It includes existing conditions of the landscape, particularly alterations from past developments and uses of the land.

4.1.4 Chapter Organization

Because the BLM is not considering the alternatives as stand-alone scenarios, effects from different management actions under all alternatives are considered by the following resource topics:

- Social and Economic Conditions
- Cultural Resources
- Inventory Units and Study Areas (Wild and Scenic Rivers, wilderness characteristic inventory units, ACECs)
- Aquatic Ecosystems and Fisheries Resources (including water quantity and quality)
- Wildlife (including T&E Species)
- Terrestrial Ecosystems and Vegetation Resources (including noxious weeds and T&E Species)
- Forest Resources
- Grazing Resources
- Fire Management
- Transportation and Access
- Recreation
- Air Quality

For each resource, the possible effects from other resource management programs are described and analyzed. Within each section of the resource analysis, effects common to all alternatives are discussed first. Then effects from individual alternatives are described comparatively, to clarify differences between the alternative approaches, and cumulative impacts are considered; where no cumulative impacts are stated, they are considered to be negligible or nonexistent.

4.2 IMPACTS TO SOCIAL AND ECONOMIC CONDITIONS

Under all of the alternatives, impacts to social and economic conditions could result from a wide range of management decisions. The range of potentially affected resources and conditions is extensive; however, only impacts to a few of these resources may be major: two social (potential conflicts between recreationists and local residents, and impacts on ranchers related to the grazing impacts of one of the alternatives), and one economic (income and employment effects on affected ranchers). The socioeconomic conditions that are the focus of this evaluation include: potential employment/job and income effects on affected businesses and the local and regional economies; effects on the fiscal resources of local governments; and changes in the demand for local public services (i.e., law enforcement, fire protection, and search and rescue).

Many human impacts cannot be measured in economic terms, and are considered as social impacts. These include detractions from existing lifestyles, sense of place, community values, and unfair or unjust impacts or burdens on minority and low income populations (environmental justice).

4.2.1 Impacts to Social and Economic Conditions from Visual Resource Management

The Visual Resource Management (VRM) system would be implemented under all of the alternatives, including the completion of visual resource contrast ratings for existing roads and facilities and proposed projects, as well as an inventory of existing and potential key scenic vista points. Protection of scenic qualities of the region would be further enhanced by coordinating with local management agencies to ensure that coastal developments do not detract from the scenic integrity of the area. Similarly, all new site developments within the KRNCA will be designed and located so that they do not detract from the coastal bluff viewshed.

By helping preserve the scenic quality of the region through coordinated management efforts, all of the alternatives would provide moderate, long-term beneficial impacts to local residents and visitors alike. In particular, locals who personally identify with the rugged landscape are likely to experience a minor to moderate, positive impact from the continued protection of unobstructed views. There would also be beneficial impacts to fiscal resources in the County, associated with minor increases in property tax revenue resulting from amenity values positively influencing local property values. These amenity values are associated with a property's proximity to a significant protected open space resource. Those with view lots or homes would enjoy major positive impacts, as open space vistas on the California coastline continue to become a rarer commodity in the future. The visual management policies described above are not expected to lead to employment, income, or public service effects.

Protection of the Lost Coast visual resources of a naturally appearing coastline is also central to the identity and sense of place of local and regional residents. Thus increased protection of the visual resources will have a moderate to major positive social impact.

4.2.2 Impacts to Social and Economic Conditions from Cultural Resources Management

Under Alternatives A and B, there would be no change to existing levels of cultural and historic resource management, so the only impact is likely to be a continuation of the minor, beneficial social impact to people who personally identify with the cultures and/or history represented by these types of resources. Alternatives C and D include policies to increase monitoring and site patrols for additional protection of cultural and historic resources in all three management zones. Such policies would place additional demand on BLM staff that provide monitoring and patrol services. Since the BLM plans on using its staff to meet future monitoring and site patrol needs at KRNCA, there would be no additional demands placed on local agencies for these services.

4.2.3 Impacts to Social and Economic Conditions from Lands and Realty

The acquisition of lands throughout the KRNCA area would continue under a "willing-seller" policy under Alternatives A and D, whereby lands and interests determined to be desirable for consolidation to facilitate management may be acquired from local property owners that have demonstrated an interest to sell their property. If private properties are acquired, thereby removing them from County property tax

rolls, lands and realty practices implemented by the BLM under Alternatives A and D have the potential to negatively affect County revenues if payments in lieu of taxes (PILT) payments are not sufficient or available to compensate the affected jurisdictions. The extent of future property acquisitions is expected to have minor impacts when viewed on a county-wide basis. Therefore, this is considered a potentially minor, long-term, and adverse impact to the fiscal resources of Humboldt County, with negligible impacts to Mendocino County due to the small amount of KRNCA acreage in the county.

Under Alternatives B and C, new policies would be implemented that may restrict the amount of future land acquisitions. No lands would be acquired in the Residential Zone under Alternative B unless specifically proposed by the potentially affected local government (i.e., Humboldt and/or Mendocino County). Under Alternative C, the BLM could propose property acquisitions in the Residential Zone, but would work with affected local governments and local community associations regarding such acquisitions. Nevertheless, under these alternatives, there is the potential for additional land acquisitions by the BLM over time, which would change the existing balance of public and private lands in the project area. Such acquisitions would be a minor, long-term and adverse impact to the fiscal resources of local agencies; however, the potential for such impacts under Alternatives B and C is less than under Alternatives A and D, with the lowest potential for property acquisition occurring under Alternative B.

Any fiscal impacts would likely be offset by property tax revenue increases as property values near open-space areas generally increase over time. Local land trusts and other collaborative organizations could also experience a minor to moderate, long-term, adverse impact if the BLM's flexibility in land acquisition is limited. Some local minor social impacts could occur as less rural private land would be available for home site development in the immediate vicinity of acquisition areas.

In addition, lands and realty practices may affect the quantity, location, and type of rights-of-way (ROW) permitted within the KRNCA. Under Alternatives A and D, applications for all types of new rights-of-way in all management zones will be considered. As a result, additional ROWs may be located in the project area in the future relative to existing conditions. Because these proposed ROWs may include features such as above-ground utility and communication facilities, there is the potential to adversely affect visual resources, which in turn may result in a minor, long-term, and adverse effect on property values. By accommodating such ROWs, the alternatives would continue to provide lower-cost infrastructure options for local utilities that can result in beneficial impacts to local businesses and thus the local economy; however, because this does not represent a change from existing conditions, no impact is anticipated. Alternatives B and C would make Backcountry Zone an exclusion area for new rights-of-way and/or permits, and utility rights-of-way would be restricted to underground locations to preserve aesthetic values. This action would cause no associated adverse effects on property values as described above, but there could be indirect costs borne by utility companies that would either have to re-route facilities or implement higher-cost construction techniques for underground installation. This could result in minor, long-term, and adverse impacts to local utilities and indirect impacts to the local economy.

4.2.4 Impacts to Social and Economic Conditions from Inventory Units and Study Areas

Socioeconomic impacts associated with inventory units and study areas are related to potential changes in income and employment opportunities and local property values. Under Alternative A, there would be

no change in the quantity of land or rivers receiving special protection; therefore, there is no potential for related socioeconomic impacts under this alternative.

Under Alternatives B, C, and D, there would be additional lands identified as having wilderness characteristics, and rivers identified as suitable for Wild and Scenic River designation. Under Alternatives C and D, the Mill Creek area would be designated as an ACEC. The most areas receiving special protection would occur under Alternative B, less would be identified under Alternative C, and the least amount of acreage/areas would occur under Alternative D. However, little or none of the special forest product harvesting that occurs at the KRNCA takes place in the identified areas. Therefore, potential and negative income and employment effects are not expected. Some forest restoration and fuels projects would be foregone by the areas managed for wilderness characteristics under Alternatives B and C. This would reduce funding for local contracts and cooperative agreements to complete the work, resulting in minor, long-term, adverse economic impacts.

Formally identifying land and water areas as protected open space would likely generate amenity values to private properties in the local area. If this value is captured during property tax assessments, there is the potential for Alternatives B, C, and D to generate higher property tax revenues that would be realized by the local county. This is considered a minor, long-term, and beneficial impact to the fiscal resources of Humboldt and to a lesser degree Mendocino County.

4.2.5 Impacts to Social and Economic Conditions from Aquatic Ecosystems and Fisheries Management

All of the alternatives provide for some level of restoration activity for aquatic ecosystems, including up-slope sediment reduction, in-stream habitat enhancement, riparian silvicultural work, and monitoring measures. In addition, Alternatives A, C, and D include an estuary enhancement program. Many of these activities would be implemented in coordination with local watershed restoration groups. In the past this kind of work has been a major source of funding for these groups; from 1995-2003, roughly \$1.5 million was spent on restoration and monitoring. While there are no assurances that this level of funding would be maintained, it is possible. The funding of such local conservation programs would be a long-term, minor, and beneficial impact to the local economy. Such impacts would include temporary increases in income and employment enjoyed by involved individuals and organizations. Indirectly, this increase in income and associated spending by affected individuals and organizations would in turn result in negligible, but positive, impacts to fiscal resources (i.e., state and local sales tax revenues and state and federal income tax revenues). Positive economic impacts would be greatest under alternative D as this alternative would include the largest number of projects.

The communities that surround the King Range have established a serious commitment to restoring watersheds and salmon habitat, as evidenced by the multitude of local restoration groups in the area and their extensive efforts to improve nearby fisheries since the early 1980s (House 1999). Many personally identify with the health of area streams and take delight in seeing the anadromous fish making their annual migrations inland to spawn. Knowing that their work is supported and encouraged by the BLM would give local participants in these restoration groups an additional moderate, long-term, beneficial social impact.

4.2.6 Impacts to Social and Economic Conditions from Wildlife Management

None of the alternatives include wildlife management prescriptions that involve funding of local conservation groups or otherwise actions that would affect socioeconomic resources. The BLM is responsible for habitat management, not wildlife population management. Therefore, habitat improvement projects (e.g. old-growth forest, coastal prairie restoration) are the focus of wildlife management under this plan and impacts are discussed in those respective sections.

4.2.7 Impacts to Social and Economic Conditions from Terrestrial Ecosystems and Vegetation Management

Under all of the RMP alternatives, existing programs that utilize the services of local conservation organizations would continue to help control invasive plant species. The funding of such local programs would be an input to the local economy, thus leading to the same type of positive economic impacts summarized above in Section 4.2.5. However, relative to existing conditions (which already include programs to help manage invasive species), there would be no new impact to socioeconomic resources.

4.2.8 Impacts to Social and Economic Conditions from Forest Management

Forest management practices have the potential to positively affect socioeconomic resources by increasing the income of local contractors or conservation groups, and by causing the types of related and beneficial employment and fiscal resource effects described in Section 4.2.5. Alternatives C and D include silvicultural treatments that would be performed, where possible, by means of cooperative agreements, partnerships and contracts, with local communities or individuals. Salvage timber harvests also would be allowed. If local resources are used in implementing these policies, they would generate direct income and job effects realized by involved individuals, and secondary sales and income tax revenues earned by state and local governments. Because these effects represent enhancements to existing conditions, they are considered a minor, short-term, and beneficial impact to local socioeconomic resources. The regional fiscal impacts would also be positive and short-term, but negligible.

Alternatives A and B are not expected to cause the types of impacts described above because they do not include programs to involve local conservation groups or individuals in the implementation of silvicultural treatments, nor do they include policies calling for salvage timber harvests, which could use local contractors or conservation groups. Because this does not represent a change from current management conditions, no impact to socioeconomic resources would occur under these alternatives.

There is a great deal of community interest in development of a restoration-based forest products industry. Sustainable forest management is an important community value in the Mattole valley and Humboldt County. Therefore, the restoration activities proposed under the alternatives would have moderate positive social impacts.

4.2.9 Impacts to Social and Economic Conditions from Special Forest Products Management

The BLM would continue to issue permits for the collection of mushrooms, beargrass, floral trade species, and fuelwood under Alternative A, thus leading to a continuation of existing and positive economic impacts to harvesters, primarily in the form of income and employment effects that result from the harvest and selling of harvested products in the marketplace.

Under Alternative B, only personal collection permits would be issued for all special forest products, and collection would be restricted to the Frontcountry and Residential Zones; no commercial permits would be issued. As a result, this alternative has the potential to decrease the quantity of specialty forest products harvested from the KRNCA, which in turn, would directly result in lost revenues and job opportunities for harvesters. Since most KRNCA harvesters have other collection opportunities on other public lands in northwest California, this is considered a minor, long-term, and adverse impact to local harvesters. This minor impact would be mostly felt by the Laotian/Hmong communities who are the primary commercial mushroom permittees in the KRNCA. Secondary effects would include reductions in sales and income tax revenues realized by state, federal, and local governments, which is considered a negligible, long-term, and adverse fiscal resource impact.

Implementation of Alternatives C and D may also lead to some restriction of forest product harvesting. Here, issuance of commercial permits would be allowed, but the number of permits would depend on the availability of the resource and maintenance of sustainable populations. Therefore, the number of permits issued under these two alternatives would vary from year to year, but there exists the possibility of lower harvest quantities relative to existing conditions, which would result in harvesters potentially experiencing minor, long-term, and adverse income and employment effects. Fiscal resources may experience a negative but negligible impact.

4.2.10 Impacts to Social and Economic Conditions from Grazing Management

Alternatives A, C, and D would continue existing KRNCA grazing policies. (Note: these alternatives would change the Spanish Flat allotment boundary, but the number of AUMs/amount of grazing on the allotment would remain unaltered.) In addition, four inactive grazing allotments would be administratively changed from “available” to “unavailable” for grazings. The positive economic impacts associated with cattle ranching in the project area and existing conditions, namely income and job generation accrued to local ranching operations utilizing lands within the KRNCA, and to a lesser extent, secondary job, income and sales/income tax effects, would continue under these three alternatives.

Unlike the other alternatives, Alternative B would eliminate all livestock grazing from the KRNCA. The four active grazing allotments would be eliminated, and livestock grazing levels would be reduced from 2,050 AUMs per year to 0 AUMs. Consequently, the direct and indirect income, jobs, and sales/income tax effects that were attributed to cattle grazing activities would be completely lost. Based on the estimated economic value of cattle grazing in Humboldt County (see Chapter 2), the extent of this impact would range between a total of \$10,060–\$13,670 in lost annual income to local ranchers and \$51,140–\$69,470 in total lost annual expenditures that are circulated through the local economy (primarily in the agricultural services sector), which would lead to secondary income and employment effects. It is unclear what level of employment is directly attributable to cattle grazing at KRNCA. Assuming the affected

ranchers do not have readily available grazing alternatives available with grazing costs similar to those associated with their KRNCA allotments, elimination of cattle grazing under Alternative B would be a major, long-term and adverse impact, although quite localized, on the affected ranching businesses, their owners and employees. However, when evaluated from a regional perspective, in the context of the County's income/job base, this would be a negligible adverse impact from a cumulative standpoint. Yet, while the economic impact of vegetation management may be negligible, the cultural impact of eliminating grazing, which has been a tradition in this area since Euro-American settlement in the 1850s, would be negative.

4.2.11 Impacts to Social and Economic Conditions from Fire Management

Because Alternative A would continue existing policies to fully suppress all fires regardless of cause within all Management Zones, there would continue to be a demand for fire protection services from local and state agencies and volunteer fire departments that help the BLM fight fires. These full suppression policies could potentially result in a continuation of adverse fiscal impacts to the affected agencies and volunteer departments if the future demand for fire-fighting services cannot be met by current staffing levels and budgets. In contrast, full suppression policies would also lead to a continuation of beneficial income and employment impacts for paid fire-fighters. It should be noted that in addition to the fire management policies of the BLM, the future demand for fire-fighting services is also affected by BLM's vegetation and forest management policies, hard-to-predict weather events, hydrologic cycles and even climatic change over time. It should be noted that this alternative would not actively manage lands to reduce fuel loads which would potentially provide economic benefits associated with the reduced risk of large-scale fires that could damage personal property (e.g., homes). Because Alternative A would continue existing management programs, it would not lead to new socioeconomic impacts.

Alternative B would only include full fire suppression policies for the Residential Zone. This represents a change from existing conditions and policies where full fire suppression is practiced in all zones. As a result, there would be less demand for state and local fire protection-related services under this alternative relative to existing conditions. This would be a minor, long-term, beneficial impact to the fiscal resources of affected agencies and departments, and possibly a negative but minor income impact for some paid fire fighters who do not have seasonal or permanent jobs with such agencies as CDF. In addition, because Alternative B would actively manage fuel loads in all three management zones, it may reduce the risk of potential property-damaging fire events, thereby resulting in a moderate, long-term, and beneficial economic impact to nearby property owners.

Alternative C would also lead to fewer fire suppression activities than under existing conditions; only fires in the Residential and Frontcountry Zones would be fully suppressed. Therefore its socioeconomic impacts would be similar to those described for Alternative B above, with one exception; this alternative includes policies to explore opportunities for stewardship contracts with local organizations to meet hazardous fuel reduction goals. By contracting with local interests, this policy would generate minor but positive local income and job effects, and negligible but beneficial secondary sales and income tax effects. And similar to Alternative B, this alternative would result in moderate, long-term, and beneficial economic impacts associated with active fuel-load management techniques.

Lastly, Alternative D would continue full fire suppression in all zones, similar to existing policies and Alternative A. However, this alternative would also utilize prescribed fire methods to manage fuel load. As a result, there may be additional demand placed on local fire protection agencies and departments during prescribed burn events, but less demand for such services overall, due to less frequent wildfire events resulting from lower fuel loads. Similar to Alternative C, this alternative would also explore opportunities for stewardship contracts with local interests to meet goals of hazardous fuels reduction; therefore the impacts of this alternative would likely be similar to those discussed above for Alternative C. This alternative would also result in moderate, long-term, and beneficial economic impacts associated with active fuel-load management techniques.

4.2.12 Impacts to Social and Economic Conditions from Transportation and Access

Impacts associated with transportation and access policies would be based primarily on the need for road maintenance services. Road maintenance services are provided primarily by local contractors. Under Alternative A, there would be no change in the BLM's existing road infrastructure and use restrictions; therefore, the same level of demand for road maintenance services would continue, and there would be no impact to socioeconomic resources relative to existing conditions.

Alternative B would lead to more roads being closed to public access relative to existing conditions, which would result in less demand for road maintenance services. Therefore, the need for the use of local contractors for road maintenance services could decline, potentially resulting in related negative but minor income and employment effects (assuming such contractors can easily find other contracts). In addition, Windy Point Road is traditionally used by abalone divers and deer hunters, and Telegraph Road is used by deer hunters. Closure of these routes in Alternative B would result in moderate localized impacts to these users.

Under Alternatives C and D, more roads would be open and less restrictions in place relative to Alternative B. These conditions would generate the need for similar levels of road maintenance, some of which would likely be provided by local contractors, thereby resulting in related positive, minor, and long-term income and employment effects. This in turn would lead to negligible, long-term, and beneficial fiscal resource impacts.

4.2.13 Impacts to Social and Economic Conditions from Recreation

Future KRNCA recreation use has the potential to affect local and regional socioeconomic resources. Socioeconomic impacts would primarily be in the form of income and employment effects in sectors of the local and regional economies that serve recreation users. However, future recreation use could also affect the provision of certain services by government agencies, as well as their fiscal resources.

KRNCA recreation use was projected for existing conditions and each of the four RMP alternatives. Detailed information on the methodology and results of the recreation use projections are presented in Section 4.12.13.1. Projected recreation use at KRNCA over the planning period (through 2025) is summarized in Table 4-1.

Table 4-1: Recreation Use Projections (in Visitor Days)

ALTERNATIVE	PROJECTED VISITOR DAYS (2025) ¹	CHANGE IN VISITOR DAYS ²
Alternative A	169,925 (169,925 – 220,903)	25,109 (17.3%)
Alternative B	143,523 (143,523 – 186,580)	-1,293 (-0.9%)
Alternative C	162,858 (162,858 – 211,715)	18,042 (12.5%)
Alternative D	177,938 (177,938 – 231,319)	33,122 (22.9%)

¹ Numbers in parentheses represent range of recreation use projections.

² Represents absolute and percentage increase in recreation use relative to existing conditions.

Source: EDAW 2003

4.2.13.1 Potential Income and Employment Effects

The estimated total number of recreation visitor days (includes casual recreation use and Special Recreation Permits) at KRNCA through 2025 ranges between approximately 143,500 and 178,000 under the four project alternatives; this represents a decrease of roughly 1,300 visitor days under Alternative B at the low end and an increase of roughly 33,100 visitor days under Alternative D at the high end. In order to translate projected recreation use levels into potential income and employment effects associated with the alternatives, it was necessary to make several assumptions regarding future recreation use and spending. It is assumed that the same proportion of existing resident (11 percent) versus non-resident visitors (89 percent) would utilize the recreation resources at KRNCA in the future; there is no change in the participation rates across recreation activities relative to existing conditions; and the proportion of recreation spending “captured” by the local economy remains constant.

Based on these assumptions and following the methodology discussed in Section 4.12.13.1, total recreation expenditures were estimated for the four project alternatives. Table 4-2 summarizes direct recreation expenditures and associated income and job effects by alternative, as well as non-market/consumer surplus value estimates for recreation opportunities at KRNCA. It should be noted that a dollar value can also be placed on other types of environmental benefits associated with the KRNCA; however, doing so requires extensive surveys and other techniques that were not conducted for this analysis. The recreation-related non-market values presented in Table 4-2 are indicative of the value of some of these benefits using readily available study results.

Based on these direct expenditures, and using applicable recreation-based multipliers, recreation use at the KRNCA could generate about \$2.89 million in direct labor and proprietor income in the regional economy (i.e., primarily Humboldt County, and to a lesser extent Mendocino County) and could also directly support approximately 169 jobs under Alternative A; \$2.44 million and 142 jobs under Alternative B; \$2.77 million and 162 jobs under Alternative C; and \$3.03 million and 177 jobs under Alternative D. The total direct, indirect, and induced effect of these expenditures circulating through the regional economy could amount to approximately \$5.05 million in income and 232 jobs under Alternative A, \$4.26 million in income and 196 jobs under Alternative B, \$4.84 million in income and 222 jobs under

Alternative C, and \$5.28 million in income and 243 jobs under Alternative D. In addition, the estimated “willingness-to-pay” value, the value (or worth) of the experience to the recreationists, is estimated to range between \$3.69 million (Alternative B) and \$4.58 million (Alternative D) (all estimates are in 2000 dollars). Because the estimates of future recreation use at KRNCA represent the lower bound of the potential range of future use levels, the associated economic impacts presented above are conservative and could range higher as shown in Table 4-2.

Table 4-2: Potential Socioeconomic Effects from Projected KRNCA Recreation Use

ALTERNATIVE	DIRECT EXPENDITURES ^{1,2}	RELATED INCOME EFFECTS ^{1,2}		RELATED EMPLOYMENT EFFECTS (JOBS) ²		EXAMPLES OF NON-MARKET EFFECTS (Willingness-To-Pay for Recreation-Related Benefits) ^{1,2}
		DIRECT	TOTAL ³	DIRECT	TOTAL ³	
Alternative A	\$8.34 (\$8.34 - \$10.85)	\$2.89 (\$2.89 - \$3.76)	\$5.05 (\$5.05 - \$6.56)	168.6 (168.6 - 219.2)	232.0 (232.0 - 301.7)	\$4.37 (\$4.37 - \$5.68)
Alternative B	\$7.05 (\$7.05 - \$9.16)	\$2.44 (\$2.44 - \$3.17)	\$4.26 (\$4.26 - \$5.54)	142.4 (142.4 - 185.1)	196.0 (196.0 - 254.8)	\$3.69 (\$3.69 - \$4.80)
Alternative C	\$8.00 (\$8.00 - \$10.39)	\$2.77 (\$2.77 - \$3.60)	\$4.84 (\$4.84 - \$6.29)	161.6 (161.6 - 210.1)	222.4 (222.4 - 289.1)	\$4.19 (\$4.19 - \$5.44)
Alternative D	\$8.74 (\$8.74 - \$11.36)	\$3.03 (\$3.03 - \$3.94)	\$5.28 (\$5.28 - \$6.87)	176.6 (176.6 - 229.5)	243.0 (243.0 - 315.9)	\$4.58 (\$4.58 - \$5.95)

¹ Millions of dollars

² Numbers in parentheses represent range of results based on the range of recreation use projections.

³ Includes direct, indirect, and induced impacts.

Under existing conditions, it is estimated that recreation use at KRNCA results in about \$2.46 million in direct income and directly supports approximately 144 jobs; the total (i.e., direct, indirect, and induced) income and job effects are estimated to be \$4.30 million and 198, respectively. When analyzing the project’s socioeconomic impacts, it is important to evaluate the relative change between income and job effects associated with the project alternatives and existing conditions. All of the project alternatives, except Alternative B, are expected to result in an increase in recreation-induced income and jobs at 2025 relative to existing conditions, and thus, would benefit the local and regional economies. Alternative B, on the other hand, would result in lower income and jobs at 2025 relative to existing conditions, and thus, would adversely affect the local economy.

It is also important to consider the magnitude of the income and job effects in the context of the size of the economy which is primarily affected. Under Alternatives A, C, and D, the estimated maximum increase in total KRNCA recreation-induced income relative to existing conditions is \$0.98 million (Alternative D), which represents only 0.03 percent of Humboldt County’s total income base. Similarly, in terms of total jobs, the maximum increase is estimated to be about 45 jobs (also under Alternative D), which represents only 0.07 percent of Humboldt County’s total job base. Therefore, under these three alternatives, inputs to the regional economy from recreation spending associated with KRNCA are considered long-term and minor beneficial impacts. Similar beneficial impacts would be enjoyed by local business owners and their employees, and such impacts could be major depending on a number of

factors, including their specific location relative to visitor travel routes, how much of their existing business capacity is being utilized now, room for expansion, etc.

Alternative B would likely result in lower income and job effects relative to existing conditions. However, the decrease in the County's job and income base would be minimal. In fact, it is estimated that income levels would decline by only .001 percent and jobs would decline by only .003 percent. Because the projected recreation-induced income and job effects represent such a small portion of the regional economy under Alternative B, they would likely be negligible, long-term adverse impacts to the region.

4.2.13.2 Potential Public Services and Fiscal Resources Effects

In terms of public services and fiscal resources potentially affected by changes in KRNCA recreation use, public service-related effects would be related to the provision of law enforcement and search and rescue services. Affected agencies would be the county sheriff departments, BLM, the California Department of Forestry, and the U.S. Coast Guard. The future demand for such services, and therefore likelihood of related effects on these agencies, would be directly proportional to the estimated changes in recreation use shown in the far right column of Table 4-1 above. Alternatives A, C, and D would likely lead to an increase in the demand for law enforcement and search and rescue services, while Alternative B would likely result in a decline for such services.

The budgets/fiscal resources of these agencies also would likely be affected as KRNCA recreation use changes over time. The magnitude of these potential public service and fiscal impacts are very difficult to predict, given the wide range of service capacities and financial conditions of each potentially affected agency; however, based on the experience of local BLM staff, such impacts are not expected to be major.

The fiscal resources of local county governments would also be indirectly affected by future recreation use levels through sales and lodging taxes. Expenditures for recreation-related goods and services are subject to state sales taxes that are collected by the state and distributed to counties. For those recreationists who stay overnight when visiting KRNCA, lodging taxes are also collected at the county level. Because the proportion of total recreation expenditures for goods, services, and lodging is not known, it is not possible to quantify sales and lodging tax effects on the county's fiscal resource base. However, based on the projected recreation use estimates in Table 4-1 above, it can be concluded that tax revenues would likely increase under Alternatives A, C, and D, while declining under Alternative B. These tax revenue impacts would likely be relative to total county tax revenues.

4.2.13.3 Potential Non-Market/Consumer Surplus Effects

Table 4-2 also indicates that the consumer surplus value experienced by recreationists at KRNCA would likely be highest under Alternative D, followed by Alternatives A, C, and B. All the alternatives except Alternative B would result in higher consumer surplus values relative to existing conditions, and therefore, minor, long-term, and positive related impacts. Alternative B would result in lower consumer values, which would be considered a negligible, long-term, and adverse impact.

Minor negative impacts would occur to the rural isolated character of the communities surrounding the KRNCA, particularly for those residents who moved to the area to get away from mainstream society.

These would occur under Alternatives A, C, and D. However, with projected use increases these impacts are expected to be minor. Moderate positive social impacts would be realized by continued expansion of environmental education programs, especially to local school groups. Also, the increase in trails and other recreation opportunities would improve amenities for local residents to enjoy the outdoor resources in their backyards, by providing additional community green space.

4.2.14 Impacts to Social and Economic Conditions from Interpretation and Education

None of the interpretive and education prescriptions under any of the alternatives would cause impacts to social or economic resources.

4.2.15 Potential Cumulative Impacts to Social and Economic Conditions

4.2.15.1 Cumulative Impacts from Land Acquisition Program

BLM has acquired roughly 25,700 acres to date in the KRNCA since it was established in 1970. The present plan is calling for a much smaller BLM acquisition program, since most of the private lands within the KRNCA have already been acquired. Several other acquisition efforts are also ongoing within the Mattole Valley. These programs are in support of the “Redwoods-to-the-Sea” Corridor and Sanctuary Forest efforts, and are led by private conservation organizations. Future acquisitions by these entities are anticipated to be mostly in the form of conservation easements. Thus, the land transferred to public agency management will be minor. However, the acquisitions will still affect county tax revenues. These reductions in taxable properties will be partially offset by payments in lieu of taxes and increased property values on lands adjoining conservation easements, so the net impact is expected to be minor. Overall, it is anticipated that an additional 5-15,000 acres will be placed under easements or public ownership within the King Range and adjoining Mattole watershed within the next 25 years through the combined efforts of public agencies and land trusts. There are approximately 155,000 acres of private land in the Mattole watershed, so this level of public acquisition would have relatively minor impacts on the amount of private land in the region available for homesites and other private uses.

4.2.15.2 Impacts from Increased Visitation and Tourism

Humboldt County has been actively working in recent years to increase tourism, especially ecotourism. Under all alternatives, the King Range would continue to be a destination that attracts visitors to the region and contributes to the natural resource-based tourism economy of the “Lost Coast” and “Redwood Coast.” Communities such as Shelter Cove, Ferndale, and Garberville-Redway are expected to continue to promote the region as a recreation destination. Other recreation attractions in the area such as Sinkyone Wilderness State Park and Humboldt Redwoods State Park are not proposing major changes in management or development that would have dramatic cumulative impacts on visitation levels when combined with proposed actions in this plan. Therefore, cumulative changes in visitation levels to the region are expected to involve moderate increases throughout the life of the plan, mostly attributable to population growth and marketing efforts by community and regional tourism promotion organizations. These changes would result in moderate positive economic impacts to the region, and minor to moderate social impacts. The social impacts would be mixed positive and negative depending

on a specific individual's perspectives; for example, additional recreation amenities will be available to area residents enhancing their quality of life. However, increased tourism could detract from community character and cause crowding and other negative impacts.

4.3 IMPACTS TO CULTURAL RESOURCES

The basic cultural resource preservation goals are the same for all the alternatives and express the King Range's and the local community's desire to employ outreach, educational and interpretive efforts aimed at the protection and study of prehistoric and historic sites, features, and artifacts situated within the KRNCA. All of the alternatives (A through D) consist of policies that place a high priority on the preservation of cultural resources in the Backcountry, Frontcountry, and/or Residential Zones. The need for resource monitoring and cooperation with the local Native American community is also included as a significant element in these efforts.

4.3.1 Impacts to Cultural Resources from Visual Resources Management

Under all alternatives, existing policies would remain in place to maintain or strengthen current management levels of visual resource management (VRM), and the impacts on cultural resources would be negligible. In general, efforts at preserving visual resources can aid in the preservation of cultural resources. In particular, placing new construction away from the coastal bluff viewshed will aid in the protection of prehistoric and historic sites, features, and artifacts, which are frequently situated directly in coastal settings.

4.3.2 Impacts to Cultural Resources from Cultural Resources Management

All four alternatives (A through D) provide some level of protection for prehistoric and historic cultural resources within the KRNCA. In general, the effects of management programs on the resources themselves would result only in positive or "negligible" impacts. Protection of sites through physical means utilizing barriers, fences or erosion control methods and designation of grazing areas away from known sites, etc., would all aid in maintaining resource integrity and significance. Interpretive aids such as educational signs or printed materials for visitor use would enlighten the general public as to the presence of cultural resources and their vulnerability to damage and destruction through man-made or natural processes. Unfortunately, drawing visitor attention to significant cultural sites also raises their visibility and may increase the likelihood of intentional damage or destruction through looting.

Alternatives A and B maintain current cultural resource management programs and policies and contribute to reducing adverse impacts to prehistoric and historic resources in the KRNCA. In contrast to Alternatives A and B (focused on the Backcountry and Residential Zones), Alternatives C and D place equal priority on the preservation of cultural resources in all three zones (Backcountry, Frontcountry, and Residential). Alternative D offers the most proactive actions for documenting and protecting prehistoric and historic resources, including increased levels of resource monitoring, calls for surveys in the Frontcountry Zone in particular, production of a Regional Overview, development of resource stabilization projects, and nomination of King Range historic and prehistoric archaeological districts to the National Register of Historic Places (NRHP). The implementation of Alternative D would, out of all four alternatives, provide for the greatest levels of protection and management of cultural resources

within the KRNCA and would contribute greatly towards reducing adverse impacts to a moderate or negligible level.

4.3.3 Impacts to Cultural Resources from Lands and Realty

The acquisition of additional lands for administration by the KRNCA, particularly those located in the Shelter Cove area, could result in generally positive impacts on cultural resources. Under all alternatives, property purchases from willing landowners would serve to prevent residential or commercial development on those parcels. This could protect documented cultural resources by reducing or eliminating development activities in sensitive areas. In addition, land acquisition would contribute to the preservation of undocumented cultural resources that might exist on acquired parcels. Only a few acquisitions are expected in Shelter Cove, so these positive impacts would be minor.

4.3.4 Impacts to Cultural Resources from Inventory Units and Study Areas

All of the alternatives except Alternative A make some provision for management of parts of the area to protect wilderness characteristics, wild and scenic river values or as Areas of Critical Environmental Concern (ACEC). These areas can and do include significant cultural resources, and the recognition of the unique status of these locations provides for more intensive levels of management. As a result, archaeological materials in these areas would be under greater protection, constituting a minor, positive impact.

4.3.5 Impacts to Cultural Resources from Aquatic Ecosystems and Fisheries Management

All alternatives stress the importance of the ecological health of watersheds and watershed restoration efforts in cooperation with private landowners. Prehistoric resources in particular tend to be located close to perennial fresh water sources such as streams, springs, and wetlands. Efforts to preserve such areas could, by association, benefit documented and unrecorded cultural resources located at or near these well-watered areas. However, active restoration efforts could result in minor, moderate, or major adverse impacts to these same cultural resources if restoration plans include heavy vegetation removal and ground disturbing activities. Such disturbance would consist of localized impacts, particularly in locations such as the Mattole Estuary. Numerous documented prehistoric sites are located within and adjacent to this area and could be vulnerable to grading, exotic plant removal and habitat restoration programs. However, Section 106 of the National Historic Preservation Act requires that all possible ground-disturbing projects be reviewed, with a site visit, by a qualified archeologist. Compliance with this regulation should ensure that no cultural resources or sacred places are disturbed, thus resulting no adverse impacts to cultural resources from aquatic ecosystems and fisheries management.

4.3.6 Impacts to Cultural Resources from Wildlife Management

Impacts to documented or unrecorded cultural resources resulting from the maintenance and enhancement of wildlife populations and habitats in the KRNCA are likely to be negligible under all alternatives. Preservation of amphibian habitats, which would include wetland areas, could have positive

impacts for cultural resources by protecting watered areas more sensitive for containing prehistoric archaeological materials.

4.3.7 Impacts to Cultural Resources from Terrestrial Ecosystems and Vegetation Management

Under all alternatives, the maintenance of coastal dune systems and the eradication of invasive floral species are stressed. In general, the utilization of prescribed burns, the replication of historic fire regimes, and native grass enhancement programs would have negligible, localized impacts on cultural resources. However, manual tree removal as included in Alternative B, could impact subsurface archaeological deposits through the disturbance of soil strata, resulting in minor to moderate impacts with long term effects. Archaeological clearances would be completed prior to any projects to ensure that significant sites are not harmed. Prescribed burns, if not properly controlled, could result in moderate to major impacts to standing historic structures and buildings. This would be of particular concern in areas near historic ranching operations, such as the Chambers Ranch. Prescribed burns would only be done by a qualified “burn boss” working in conjunction with a cultural specialist.

4.3.8 Impacts to Cultural Resources from Forest Management

Alternatives A, B, and C possess little potential for impacting cultural resources in the KRNCA. Tree removal would be limited under Alternatives A, B, and C; under B, no salvage timber harvests would be performed following stand replacement fires, nor would commercial logging be permitted. Such limited timber harvesting could result in negligible or minor impacts to documented and unrecorded cultural resources. Alternative D would allow the reopening of old logging roads and the construction of temporary access roads for timber salvage operations. Due to the ground disturbance involved in road construction and eventual removal under Alternative D, a greater possibility exists that archaeological sites and materials would be subjected to impacts. Archaeological clearances conducted to comply with Section 106 of the NHPA should prevent such disturbances from occurring.

4.3.9 Impacts to Cultural Resources from Special Forest Products Management

Alternative A recognizes the need for preservation of beargrass patches and restricts impacts to this species through the issuance of cultural use collection permits for the Native American community. Alternative C takes a more proactive approach toward expanding beargrass habitat with the establishment of Native American Beargrass Collection Unit(s). Such programs and efforts would have negligible or positive, long term impacts on this particular natural/cultural resource. Use of other special forest products such as the collection of species utilized in the floral trade, fuel wood from firebreak creation, or the personal collection of mushrooms would have negligible impacts on cultural resources.

4.3.10 Impacts to Cultural Resources from Grazing Management

Four active ranching operations currently exist within the KRNCA, some elements of which constitute cultural resources, such as the Chambers Ranch complex. Ongoing livestock grazing has the potential to result in minor to moderate, long-term impacts on significant cultural resource locations; all four alternatives address these impacts. Alternative B would remove all livestock grazing in the King Range,

thereby eliminating any potential impacts to cultural resources, including documented prehistoric and historic sites. Alternatives A, C, and D redefine the Spanish Flat and Randall Creek grazing allotments to protect documented cultural resources. These restrictions would aid in the elimination or minimization of disturbances to archaeological materials and could result in negligible or minor beneficial impacts.

4.3.11 Impacts to Cultural Resources from Fire Management

Alternatives A and D would continue existing policies of full suppression of all fires, regardless of cause, within all three management zones. Alternative B allows natural fires in the Backcountry and Frontcountry Zones to burn, which increases the risk for impacts to prehistoric or historic sites, features, or artifacts. However, any burn plans would include contingencies to protect cultural features, so these impacts are expected to be minor. Alternative C also allows natural wildfires to burn in the Backcountry Zone, but not in the Frontcountry, representing a slight decrease in potential impact on cultural resources.

Alternatives C and D constitute the most aggressive alternatives in terms of fuel management and provide for mechanical fuel reduction methods. If such methods involve the utilization of heavy equipment such as trucks, skidders, earth movers, etc., there is an increased possibility that cultural resources would be subjected to major impacts and long-term effects from fire management practices in all KRNCA zones. However, these impacts could be outbalanced by the overall benefit to cultural resources of decreasing the risk of catastrophic fires and potential damage from fire suppression operations in the King Range, through fuels management that encourages a more natural role for fire in the ecosystem.

4.3.12 Impacts to Cultural Resources from Transportation and Access

All alternatives would continue existing transportation and access policies on the existing road system, with negligible impacts on documented and unrecorded cultural resources. The beach corridor and other locations with sensitive cultural sites would remain closed to vehicle use.

4.3.13 Impacts to Cultural Resources from Recreation

Alternatives B, C, and D all impose more limits on recreation use of the KRNCA than Alternative A. As recreation use can present general levels of adverse impacts to cultural resources, increased limits should result in fewer and less severe impacts to prehistoric and historic sites. This would be particularly relevant with Alternatives C and D which allow increased Backcountry (including coastal area) recreation use. Most identified cultural resources are situated within the Backcountry and, as a result, could be subjected to moderate impacts under Alternatives C and D; because most popular camping places in the Backcountry are located where prehistoric people had seasonal encampments, increases in recreation use could have an adverse effect on cultural resources. However, all of the alternatives make provisions for the placement of barriers and fences, the designation of "group avoidance areas," and additional management of recreation uses in order to protect resources and reduce impacts. Implementation of recreation management programs discussed in all alternatives would contribute towards reducing impacts from projected increases in the intensity of recreation use of the KRNCA to negligible or minor levels.

4.3.14 Impacts to Cultural Resources from Interpretation and Education

All of the alternatives would continue existing policies and would have minor impact on cultural resources within the KRNCA. By continuing to expand the interpretive program to incorporate cultural resource programs, a positive impact would be realized by increasing public appreciation and protection of the sites.

4.3.15 Potential Cumulative Impacts to Cultural Resources

The cumulative impact study area for cultural resources covers all of Humboldt County. The RMP contributes to area-wide efforts to protect and promote cultural resources. In particular, many areas within the County that lie outside of the KRNCA are privately owned, where cultural resource protections are not legally required, so the King Range contributes a disproportionately large amount to protection of cultural resources in the area. This represents a moderate positive cumulative impact.

4.4 IMPACTS TO INVENTORY UNITS AND STUDY AREAS (WILD AND SCENIC RIVERS, WILDERNESS CHARACTERISTIC INVENTORY UNITS, ACECS)

This section focuses on the affects that management actions would have on the suitability of the lands for a respective designation or protective management, and not on the impacts to the resource values themselves. For example, all of the eligible Wild and Scenic River segments have anadromous fisheries as the Outstandingly Remarkable values that contribute to their eligibility. The impact assessment in this section does not identify impacts from the various programs to the anadromous fisheries themselves (these are discussed in the Aquatic Ecosystem and Fisheries section), but only their impacts on the eligibility/suitability on the river for the designation. In most cases, the alternatives have minimal impacts on the inventory units and study areas. Also, none of the alternatives include actions that would result in an irreversible or irretrievable impact, i.e., an impact that would make a particular inventory unit or study area unsuitable for consideration for protective management under later land use planning efforts.

4.4.1 Impacts to Inventory Units and Study Areas from Visual Resources Management

Implementation of the visual resources management program would not impact the inventory units and study areas.

4.4.2 Impacts to Inventory Units and Study Areas from Cultural Resources Management

No impacts would occur to the inventory units and study areas from cultural resources management.

4.4.3 Impacts to Inventory Units and Study Areas from Lands and Realty

No impacts would occur to the inventory units or study areas from the lands and realty program.

4.4.4 Impacts to Inventory Units and Study Areas from Inventory Units and Study Areas

No impacts would occur.

4.4.5 Impacts to Inventory Units and Study Areas from Aquatic Ecosystems and Fisheries Management

No impacts would occur.

4.4.6 Impacts to Inventory Units and Study Areas from Wildlife Management

No impacts would occur.

4.4.7 Impacts to Inventory Units and Study Areas from Terrestrial Ecosystems and Vegetation Management

No impacts would occur.

4.4.8 Impacts to Inventory Units and Study Areas from Forest Management

Minor to moderate short-term impacts would occur to wilderness characteristic inventory subunits 1 H and 1 I under Alternatives C and D. Proposed forest and watershed restoration activities in parts of these units impacted from past timber harvesting would reduce naturalness and opportunities for solitude during and for a time after the operational period. However, these projects would result in long-term beneficial impacts by improving the ecological character of the units, and returning them to a forest structure that more closely approximates natural conditions.

4.4.9 Impacts to Inventory Units and Study Areas from Special Forest Products Management

No or negligible impacts would occur.

4.4.10 Impacts to Inventory Units and Study Areas from Grazing Management

No or negligible impacts would occur.

4.4.11 Impacts to Inventory Units and Study Areas from Fire Management

Minor to moderate short-term impacts would occur to the wilderness inventory subunits from fuels management projects that could occur in the Frontcountry Zone in Alternatives B, C, and D. However,

in the long-term, these projects will serve to create a landscape that more closely approximates natural conditions and is more resistant to catastrophic wildfire. This will serve to increase the naturalness of the units in the long-term.

4.4.12 Impacts to Inventory Units and Study Areas from Transportation and Access Management

No impacts would occur.

4.4.13 Cumulative Impacts from Inventory Units and Study Areas

In terms of cumulative impacts, with a study area identified as the North Coast region, these inventory units and study areas contribute to systems of protected lands already in place. For example, a number of wilderness areas have already been designated within fifty miles of the KRNCA, including the North Fork Wilderness, the Yolla Bolly Middle-Eel Wilderness, and Humboldt Redwoods State Park Wilderness. However, the King Range and adjoining Sinkyone Wilderness State Park are the only coastal lands with wilderness characteristics. A number of BLM Wilderness Study Areas are also within fifty miles of the King Range. There is one other ACEC/RNA in the Mattole Valley (The Gilham Butte ACEC/RNA). This area complements the old growth forest and watershed protection of the Mill Creek area, resulting in a positive cumulative impact. The cumulative impacts of Wild and Scenic River designation (Regional Summary of Rivers) are described in Appendix C.

4.5 IMPACTS TO AQUATIC ECOSYSTEMS AND FISHERIES RESOURCES

The description of potential impacts to fisheries resources described below is based on the assumption that allowable uses that could potentially affect aquatic habitat in the KNRCA will be guided by determining consistency with aquatic and fisheries goals, management objectives and Aquatic Standards and Guidelines (Appendix G), which are specific to ongoing or future proposed land management activities. Chapter 3 described the aquatic and fisheries goals and objectives, which are common to all alternatives. Riparian Reserves (RRs) include lands along streams and associated areas necessary for maintaining hydrologic, geomorphic, and ecological processes. The fisheries goals and objectives, along with the Aquatic Standards and Guidelines, limit or exclude land use activities under all alternatives so that riparian and aquatic habitat is maintained and restored. The goals, objectives, standards and guidelines, and RRs would be used to screen all future projects under all alternatives and were designed to operate together to maintain productivity and resiliency of riparian and aquatic ecosystems and the species that depend on them.

The alternatives contain actions that are ongoing within the KRNCA (existing grazing management, fuels reduction actions, road maintenance actions, existing recreation facilities, timber stand improvement actions, etc.) but may be modified by the alternatives. Ongoing actions have already undergone Endangered Species Act Section 7 consultation with NOAA Fisheries and have been analyzed on a programmatic or project basis. Thus, additional direction relevant to protection of riparian and aquatic habitat in the KRNCA includes, but is not limited to, measures contained in existing biological assessments and ESA consultation documents specific to these ongoing actions. If any of the proposed activities discussed under the alternatives are outside of the scope of existing Section 7 consultations,

and/or if an activity could affect a listed species but has not undergone Section 7 consultation, that activity would be subject to Section 7 consultation prior to implementation.

4.5.1 Impacts to Aquatic Ecosystems and Fisheries Resources from Visual Resources Management

All VRM actions and inventory procedures would need to move conditions of riparian and aquatic ecosystems toward attainment of the fisheries goals and objectives. Examples of management actions that would reduce existing visual impacts were given in Section 3.4.2.3 and included painting of culverts and removing road berms. These types of actions have the potential for adverse impacts to aquatic habitats and fisheries if not conducted properly. However, because all proposed VRM actions would be screened for consistency with the aquatic goals and objectives prior to implementation, and because these were designed to prevent degradation of riparian and aquatic habitat, there would be no impact to fisheries from visual resources.

4.5.2 Impacts to Aquatic Ecosystems and Fisheries Resources from Cultural Resources Management

Under all alternatives, existing policies would remain in place to protect cultural resources from the management actions identified to restore or maintain desired conditions for fisheries resources, so there would be no change in BLM's ability to implement fisheries restoration projects. Policies to maintain or increase monitoring, site patrols and collaboration with Native Americans under Alternatives A, B, C, and D would have no impact on fisheries resources. Policies encouraging surveying, regional overviews, stabilization of historic structures and development of National Register nominations under Alternative D would have no impact on fisheries resources.

4.5.3 Impacts to Aquatic Ecosystems and Fisheries Resources from Lands and Realty

Policies to obtain lands, specifically lands within anadromous watersheds, could facilitate watershed protection, restoration, and recovery of fisheries. Land acquisitions could have major beneficial impacts to fisheries by increasing the extent of watershed area that is specifically managed to maintain and restore riparian and aquatic habitat. The Aquatic Guideline LH-5 directs BLM to use land acquisition to meet fisheries objectives and to facilitate the restoration of fish stocks and other species at risk.

Policies to consider new rights-of-way for roads in the Frontcountry Zone under Alternative B and C and in all zones under Alternative D could have moderate adverse impacts to fisheries due to potential watershed disturbance that could occur on private lands as a result of a change in access (i.e., road construction, timber harvest, water withdrawals). Issuance of rights-of-ways would be screened using the fisheries goals, objectives, and standards and guidelines. Aquatic Guideline LH-4 directs that rights-of-way and other permits must avoid adverse effects that retard or prevent attainment of fisheries objectives. However, because of associated activities on private land, issuance of rights-of-ways could result in moderate adverse impacts to fisheries. Activities on private lands would be consistent with State and County regulations.

BLM's assertion of water rights under Alternatives B, C, and D would not have any immediate impact on the watershed or other water users. The effects of these alternatives would only occur if the watershed becomes more developed in the future and water rights are adjudicated or if the watershed is determined to be "fully-allocated" by the state. Parties with a proven senior water right would be unaffected by BLM assertion of water rights.

4.5.4 Impacts to Aquatic Ecosystems and Fisheries Resources from Inventory Units and Study Areas

4.5.4.1 *Wild and Scenic Rivers*

Alternative A will continue existing policies that protect RRs and aquatic habitat along rivers and streams within the KRNCA, and thus would have no impact to fisheries. In addition to these policies, Alternative B would recommend 28 river segments for inclusion in the National Wild and Scenic River System (NWSRS); Alternative C would recommend fifteen segments, and Alternative D would recommend seven. Under Alternatives B, C, and D, future management prescriptions for eligible river segments would protect the free-flowing values of river segments, thereby precluding stream impoundments, diversions, channelization, and/or rip-rapping. River segments would also be managed to protect identified "outstandingly remarkable values."

Fisheries goals, objectives, and standards and guidelines were designed to protect free-flowing values of rivers including instream flows, channel conditions, and RRs. Thus, beneficial impacts of the designations are expected to be minimal on most stream segments relative to most of the fisheries management actions. Designation under the Wild and Scenic Rivers Act would require the Federal Government to protect the "outstandingly remarkable" values of each stream segment. Since the anadromous fishery is identified as the outstandingly remarkable value in all of the segments, designation would provide beneficial impacts.

4.5.4.2 *Wilderness characteristic inventory units*

All of the alternatives would continue current policies for existing WSAs until congressional designation or release occurs. Lands outside of the King Range and Chemise Mountain areas that have identified wilderness characteristics would be managed to protect these values. Lands within WSAs are subject to special management constraints and are managed to not impair their suitability for designation as wilderness. The only permissible activities are temporary uses that avoid surface disturbance, do not require reclamation, nor involve permanent placement of structures. Exceptions are granted for emergencies or existing activities that enhance wilderness values. Alternative A would continue present policies on existing lands that have been identified as having wilderness characteristics. No additional wilderness units would be identified. Alternatives B and C would each result in additional lands outside of the King Range and Chemise Mountain WSAs being managed to protect wilderness characteristics. The Chemise Mountain area drains into the South Fork Bear Creek. Bear Creek provides important spawning and rearing habitat for salmonids and is a significant tributary of the Mattole River. Thus, Alternatives B and C would provide further protection from future surface disturbances, such as roads, and would have beneficial impacts on fisheries. Alternative D protects 200 acres of acquired lands within the existing WSAs, and would have a negligible to minor beneficial impact to fisheries.

4.5.4.3 ACECs

Designation of the Mill Creek ACEC would provide positive impacts to the Mill Creek Watershed. The relevant and important values identified for protection under this designation are the cold water, fishery and old-growth forest values.

4.5.5 Impacts to Aquatic Ecosystems and Fisheries Resources from Aquatic Ecosystems and Fisheries Management

Management actions identified in the alternatives include upslope sediment reduction, instream habitat enhancement, riparian silviculture, monitoring, and estuary enhancement. All of these actions would have major, long term, and beneficial impacts to fisheries through improved habitat quantity and quality. Upslope sediment reduction would reduce the amount of fine sediment that deposits in pools and spawning habitat, which decreases suitability of Pacific salmonid habitat and may adversely affect survival of fish. Instream habitat enhancement would provide more rearing, holding, and spawning habitat. Riparian silviculture would enhance the function of riparian zones to provide increased filtering capacity, increased nutrient input to streams, and increased stream cover and large wood recruitment potential. Silviculture treatments would be screened to ensure that they benefit riparian dependent species, and methods would be constrained so that treatments do not retard or prevent attainment of fisheries goals and objectives. Estuary enhancement would benefit salmonids by increasing cover from predators and causing scour around structures, and would particularly benefit juvenile salmonids rearing in the estuary.

There could be minor short-term adverse impacts to fisheries as well as the beneficial impacts due to localized disturbance that may occur when restoration projects are implemented. For example, during road decommissioning, stream crossings are pulled out and soils are disturbed making them vulnerable to settling and erosion, especially the first winter following restoration. Sediment could be washed downstream and impact fisheries habitat. However, the minor short-term disturbances that may be associated with the management actions proposed are expected to be minimized through project-level design, and it is expected that potential impacts would be outweighed by the substantial beneficial impacts of restoration.

The alternatives vary with respect to the extent of restoration that may occur and the types of restoration that would be implemented. All alternatives, with the exception of Alternative B, would allow implementation of estuary enhancement. Estuary habitat is crucial to the life cycle of Pacific salmonids and estuary residence time may be an important determinant of ocean survival of young salmonids. There is little documentation of the historical condition of the Mattole River estuary and lagoon, but currently this area is aggraded, shallow and changes in response to environmental factors such as flood events. Studies in the Mattole estuary have indicated that the summer carrying capacity of the estuary is low, and that the estuary may be a significant bottleneck with respect to the life cycle of Chinook salmon. Limiting factors are not clear, but are likely related to water temperatures, food and predation, which are related primarily to patterns of sediment deposition in the watershed and estuary and secondarily to the quality of riparian and large wood elements within and along the estuary. Erosion control work in the watershed, as proposed under all alternatives, which reduces the input of sediment in the Mattole basin, will benefit estuary habitat and fisheries especially if coupled with estuarine enhancement work that

increases the summer carrying capacity of the estuary. Estuary enhancement would include placement of large wood structures. These structures would benefit fisheries by providing cover from predators and by causing scour that would increase water depths around the structures and act as refuge for migrating or rearing salmonids. Thus, all alternatives, with the exception of Alternative B, would have major beneficial impacts to fisheries through enhancement of estuary habitat. Alternative B would not enhance estuary habitat, but would minimize upslope sedimentation in fish bearing streams thereby indirectly helping to restore estuary habitat.

Alternatives A and C allow for the full complement of restoration actions (upslope sediment reduction, instream habitat enhancement, riparian silviculture) but only in fish bearing watersheds in the Mattole basin. Both Alternative A and C would benefit fisheries in the Mattole basin through enhancing watershed condition and fish habitat but streams in the backcountry would not benefit under these alternatives.

Similar to Alternatives A and C, Alternative B allows only upslope sediment reduction projects in fish bearing watersheds tributary to the Mattole River, with similar impacts. However, Alternative B also excludes instream enhancement, riparian silviculture and estuary enhancement would also not occur under Alternative B, thus this alternative would result in less beneficial impacts to fisheries when compared to Alternative A, C, or D.

Alternative D allows for the full complement of restoration activities to occur across the KRNCA and thus would have a substantial beneficial impact to fisheries. However, it is unknown to what extent restoration actions could benefit streams in the Backcountry Zone due to their steep gradients, high stream energy and high sediment supply and transport. The area is also essentially unroaded, so road decommissioning would likely not occur, even under Alternative D.

Monitoring is not a restoration activity but provides crucial information to managers regarding the effectiveness of restoration activities and aids in prioritizing future restoration projects. Monitoring is allowed under all of the alternatives, with the exception of Alternative B. Thus habitat, water quality condition and trends, and fisheries data would not be tracked under Alternative B and appropriate responses may not be formulated and implemented. This could result in adverse impacts to fisheries in watersheds that are managed but lack fisheries monitoring data. Alternative A and C allow monitoring in fish bearing streams in the Mattole basin only, and Alternative D allows monitoring across streams in the KRNCA. Thus, Alternative D would have a significant beneficial impact to fisheries through increased information for potentially all streams in the KRNCA; information that would be used to guide management decisions and further the fisheries goals and objectives.

4.5.6 Impacts to Aquatic Ecosystems and Fisheries Resources from Wildlife Management

Under all alternatives, existing policies would remain in place to maintain and enhance natural wildlife populations. Also, existing policies would remain in place to reduce or eliminate the need for listing of additional wildlife species under the ESA and to contribute to the recovery of listed species. Limited operating periods to protect owls and/or murrelets from noise generated by watershed restoration projects could, if implemented, constrain the amount of restoration work that can be implemented in a given year and thus would indirectly result in adverse impacts to fisheries. This would continue under all

alternatives. (However, disturbance distances can be minimized with topographic or vegetative screening around projects, which could reduce or eliminate any adverse impacts.) Actions specific to various listed species identified under all alternatives would not impact fisheries, and in general wildlife species protection benefits fisheries as well. Policies enacted under Alternatives C and D to facilitate research and monitoring of wildlife would have no impact on fisheries resources.

4.5.7 Impacts to Aquatic Ecosystems and Fisheries Resources from Terrestrial Ecosystems and Vegetation Management

Under all alternatives, existing programs would be continued to eradicate invasive plant species. However, it is unknown to what extent invasive species have colonized RRs. Thus, the potential benefits to riparian plant species associated with removal of invasive species are not known. If eradication occurred in RRs, manual methods could cause ground disturbance and potential sedimentation to streams and/or herbicide use could contaminate surface waters and adversely affect fisheries. However, projects would be screened and modified to ensure that they do not retard or prevent attainment of fisheries goals and objectives.

Under Alternative B, prescribed fire and manual tree removal would be used to maintain healthy and productive grasslands; this would have no effects on fisheries due to the fact that these actions would occur outside of RRs, and standards and guidelines would screen and modify projects to minimize site and watershed scale effects to fisheries. Manual tree removal would cause insignificant soil disturbance and would not occur in RRs. Prescribed fire methods and effects to fisheries have been previously analyzed and mitigated through Section 7 consultation. Thus, prescribed fire and manual tree removal would not impact fisheries.

The impact of limited grazing outside of allotments under Alternatives C and D is not known at this time, because it is not known whether streams would be in the vicinity, to what extent grazing outside of allotments would be allowed, and in what season grazing would occur. All ongoing grazing-related activities in the KRNCA have undergone Section 7 consultation and adverse effects have been minimized. Thus, any changes to the ongoing grazing management would cause reinitiation of consultation to ensure that effects of modifications are minimized. Thus, if limited grazing outside of allotments is proposed in the future, it is expected that streams and RRs would be protected from impacts, and upslope impacts would be minimized through project design.

Specific types of vegetation may be burned under Alternatives B and C, which could decrease soil cover and cause erosion in areas burned. However, prescribed burns and their potential effects to fisheries in the KRNCA have been analyzed and mitigated through the ongoing program and through Section 7 consultation, such that adverse impacts to fisheries are not expected.

4.5.8 Impacts to Aquatic Ecosystems and Fisheries Resources from Forest Management

Under all alternatives, existing policies would remain in place to maintain and enhance old growth forests. RRs would be protected from timber harvest under all alternatives, and projects would be screened to ensure that they don't retard or prevent attainment of fisheries goals and objectives prior to

implementation. The Aquatic Standards and Guidelines prohibit silvicultural activities in RRs except where catastrophic events have degraded riparian conditions and forest health treatments would help attain desired riparian conditions. RR widths in the KRNCA would be consistent with RR widths in the NWFP ROD, designed to protect riparian ecosystems, potentially unstable areas, inner gorges, and floodplains from management activities.

Potential impacts of silvicultural treatments under Alternatives C and D are unknown since methods of treatment and extent of treatments are not known at this time. However, it is known that silvicultural treatments may increase erosion in harvest units, roads, and landings. The risk of impacts to fisheries would be primarily related to the potential for sediment delivery to streams. Activities associated with timber harvest can substantially increase delivery of sediments to streams through both surface erosion and mass wasting. Thus, Alternatives C and D would allow increases in watershed disturbances, which may result in temporary impacts to fisheries depending on the extent, location, and characteristics of the landscape treated. Alternative B defines the extent of silvicultural treatments (the Bear Trap Plantation) and would have no impact on fisheries. Helicopter salvage harvest included in Alternative C would result in less ground disturbance than other harvest methods. Alternative D has the highest potential for adverse impacts to fisheries due to opening and use of old logging roads and construction of new temporary roads. However, these projects would only be completed if they serve to meet the primary goals of restoring forest and watershed health, and so would provide long-term positive impacts.

Timber Stand Improvement (TSI) projects could occur under all alternatives and methods have been analyzed and mitigated through the ongoing TSI program and through Section 7 consultation. Thus, TSI activities would have no impact on fisheries. All projects allowed under all of the alternatives would be designed by an interdisciplinary team and land management activities would be guided by determining consistency with fisheries goals and objectives and standards and guidelines designed to protect RRs and aquatic habitat.

4.5.9 Impacts to Aquatic Ecosystems and Fisheries Resources from Special Forest Products Management

Issuance of permits to collect mushrooms, beargrass, floral trade species, and fuelwood proposed under all alternatives would not impact fisheries. Fuelwood cutting would be prohibited in RRs unless it could be used as a tool to attain fisheries objectives. Alternative C and D would prohibit fuelwood cutting in the Mattole estuary area, which would result in significant beneficial impacts. Large wood may be recruited to the estuary during high flows, if fuelwood cutters do not remove it.

All of the alternatives could impact fisheries if road use occurs or increases during the wet season for purposes of collecting special forest products. Winter road use accelerates erosion on unsurfaced roads, and winter rains carry the fines from road surfaces to streams.

Policies to monitor mushroom collection methods, coordinate with local tribes regarding use of beargrass, and manage beargrass resources proposed in Alternative C would have no impact on fisheries.

4.5.10 Impacts to Aquatic Ecosystems and Fisheries Resources from Grazing Management

Under Alternatives A, C, and D, existing policies would remain in place. Existing policies and allotments have been analyzed and mitigated through the ongoing program and through Section 7 consultation. Aquatic Guidelines GM-1 through GM-3 would be used to guide grazing practices and placement of grazing facilities to protect aquatic habitat. Thus, Alternatives A, C, and D would have no adverse impacts to fisheries. Under Alternatives A, C, and D, the Spanish Flat allotment boundary would be adjusted to exclude 500 acres of a terraced prairie between Spanish and Randal Creeks to protect significant cultural sites, but the number of Animal Unit Months (1,105 AUMs) would remain unaltered. This represents roughly a 5 percent decrease in size of this allotment, and would not impact fisheries. Under Alternatives A, C, and D, four expired grazing leases would be administratively changed from available to unavailable for grazing. This action would result in beneficial impacts to fisheries, as it would ensure protection of streams in the lease areas from future grazing impacts. However, these leases are inactive and have not been used for grazing for several years, thus relative to existing on-the-ground impacts, this action would have no impact on fisheries.

Under Alternative B, all livestock grazing would be eliminated from the KRNCA. The four active grazing allotments would be eliminated, and livestock grazing levels would be reduced from 2,050 AUMs to zero. This would result in negligible impacts to fisheries, because the existing program has already been mitigated to minimize adverse impacts to fisheries.

4.5.11 Impacts to Aquatic Ecosystems and Fisheries Resources from Fire Management

Alternative A would continue existing policies to fully suppress all fires regardless of cause within all zones. Aquatic Guidelines FM-1 through FM-5 limit fire suppression strategies and practices to minimize impacts to fisheries. Fire suppression activities can result in adverse impacts to fisheries through construction of dozer lines and new road construction, retardant drops and water withdrawals. However fire suppression may benefit fisheries because current forest fuel loads are higher now than during the last 150 years or more. When wildland fires now occur in watersheds, the fires are dramatically different from those that occurred in the past. Many present day wildfires tend to become stand replacement fires in areas that 100 years ago would only carry small low-intensity ground fires. Fish populations that have evolved in these areas may not be able to survive the intense wildfires that can occur in these areas today. Thus, protection of aquatic habitat from the impacts of stand replacing wildfire may outweigh the short-term impacts of suppression activities.

Alternative B would allow naturally ignited fires to burn in both the Backcountry and Frontcountry Zones. Managing fuels to create a landscape resistant to damaging high intensity wildfires would have beneficial impact to fisheries in treated areas. However, due to the extent of overstocked stands and high levels of fuels, treatments would likely be limited in the watershed context and would be concentrated along roads. Thus, allowing naturally ignited fires to burn could have adverse impacts to fisheries due to forest stand conditions that have not been thinned by fire or mechanical substitutes. The relative potential impacts of wildfires that are allowed to burn versus suppression activities that could also impact fisheries must be considered in the context of existing watershed conditions. The Frontcountry is roaded and provides existing roads from which to stage suppression activities. Thus, the effects of suppression

would be lower than in the Backcountry Zone. The Backcountry Zone is essentially unroaded and suppression activities along the west slope of the KRNCA could have significant adverse impacts to fisheries in the small coastal drainages in this area if emergency suppression requires dozer lines or roads. This zone also has a different vegetation mosaic than much of the Frontcountry Zone, and fires may burn at different intensities. Thus, Alternative C may be most beneficial from a fisheries impact perspective since suppression activities may cause more adverse impacts than allowing a wildfire to burn. Alternative C allows fire suppression in the Frontcountry Zone, but would allow naturally ignited fires in the Backcountry Zone to burn. Alternatives C and D would utilize prescribed fire and mechanical methods in the Frontcountry Zone to manage fuels, and this would likely be targeted on woody vegetation outside of RRs, so riparian function would be maintained and streams would be protected from disturbance.

Alternative D would allow suppression of all wildfires in all zones, and thus could prevent a stand replacing wildfire and associated adverse impacts to fisheries. However, as mentioned above, fire suppression in the Backcountry may cause significant adverse impacts to fisheries because it is unroaded, steep and unstable.

4.5.12 Impacts to Aquatic Ecosystems and Fisheries Resources from Transportation and Access

All alternatives would continue existing policies to provide a network of roads that complement the rural character of the KRNCA. Aquatic Guidelines RF-1 through RF-7 would be used to guide road management activities in the KRNCA. Under Alternative D the seasonal limitation (April 1 to December 31) on certain roads would allow wet weather (November and December) use of roads and could impact fisheries. However, improving the road base is also included in this alternative. Thus, if the road were paved or rocked, the extended season of use would have less impact on fisheries.

Alternative B would allow closure of the Telegraph Ridge Road and decommissioning of the road alignment. As discussed above, decommissioning can have minor impacts on aquatic habitat, but these minor impacts are outweighed by significant sediment savings from road erosion and road or crossing failures. Telegraph Ridge Road is a ridgetop road so has less potential to impact fisheries, but does include one stream crossing that would be removed. Thus, removing this road would preclude future stream crossing failure and associated sediment delivery to streams. This would have a beneficial impact on fisheries.

The Mattole estuary road and spur provide access to the estuary for recreation use and firewood cutting. Alternatives B would close this road and protect large wood from firewood cutters, and protect vegetation from user traffic. Thus, this alternative would result in beneficial impacts to fisheries through increased protection from vehicular access. Alternative C and D would provide benefits to fisheries through directing use onto the main access road and other routes that do not impact riparian vegetation. If the area received increased patrol, and firewood cutting within the high tide line was prohibited, vehicle access that is contained on the main road (Alternatives C and D) and spurs that avoid riparian vegetation would have fewer impacts to fisheries. It is unknown whether poaching of adult salmonids occurs in the Mattole estuary. If so, access roads into the estuary can indirectly impact fisheries by allowing increased numbers of anglers into the area. Alternative B would close access and would have the significant beneficial impact to fisheries.

4.5.13 Impacts to Aquatic Ecosystems and Fisheries Resources from Recreation

All four alternatives would continue existing policies regarding visitor information, road and trail maintenance, resource protection, visitor safety, special recreation permits, cooperative management, exclusionary fence and barrier construction, enforcement, and Universal Accessibility Standards, so there would be no impact to fisheries.

The ongoing recreation program in the KRNCA has undergone Section 7 consultation and adverse effects have been mitigated. Thus, Alternative B, which would keep use and development at present levels, would have no adverse impacts to fisheries. Alternatives C and D would allow moderate (Alternative C) and higher use numbers (Alternative D) in the Backcountry Zone. This would increase the potential for adverse effects to fisheries in the small coastal drainages on the western slope, such as impacts related to human waste in the floodplains and trampling of habitat. Alternative C and D would also promote heavier visitor use in the Frontcountry Zone. However, existing recreation facilities in the Frontcountry Zone have been mitigated through the ongoing programs and Section 7 consultation, and new facilities would be screened to ensure that they do not retard or prevent attainment of fisheries goals and objectives, so this would have no impact on fisheries. Alternative A contains no provisions to manage use levels in the backcountry, and could result in moderate impacts to fisheries. However, impacts would be limited since almost all visitors concentrate at the mouths of the coastal streams and impact upstream riparian corridors at a much lower level.

4.5.14 Impacts to Aquatic Ecosystems and Fisheries Resources from Interpretation and Education

All the alternatives would continue existing policies to provide information to visitors. If this information included posting of fishing regulations and recommended methods to avoid surface water contamination (from human waste), the alternatives would have beneficial impacts to fisheries. If this information were not included, there would be no impacts from interpretation and education.

4.5.15 Potential Cumulative Impacts to Aquatic Ecosystems and Fisheries Resources

Within the Mattole watershed, there are numerous agencies and organizations—the Mattole Restoration Council, Mattole Salmon Group, Sanctuary Forest, Middle Mattole Conservancy, CDFG, and others—performing watershed restoration activities on both public and private lands. BLM actions proposed in this plan contribute to this coordinated effort, constituting a major beneficial cumulative impact.

In addition, BLM's exercise of water rights under this RMP would reduce future water diversions from the Mattole watershed, which otherwise could contribute to higher summertime temperatures and its drying out seasonally. This also represents a major beneficial cumulative impact to aquatic resources.

4.6 IMPACTS TO WILDLIFE

Under all alternatives, existing policies would remain in place to maintain and enhance natural wildlife populations. Also, existing policies would remain in place to minimize or eliminate the need for listing of additional species under the Endangered Species Act and to contribute to the recovery of listed species. Because these alternatives would continue existing policies, there would be a negligible negative impact on wildlife species.

4.6.1 Impacts to Wildlife from Visual Resources Management

Impacts from management of visual resources across all alternatives would have a negligible long-term impact on wildlife populations. Alternative A would continue to keep the western coastal slope in the VRM Class II designation (management activities and uses can be seen but should not attract the attention of the casual observer) and the remainder of the non-residential KRNCA in VRM Class III (management activities may attract attention but should not dominate the view of the casual observer). Because this would continue existing visual policies, there would be no impact on wildlife.

Alternatives B and C would keep the Frontcountry Zone in the Class III designation, a continuation of existing policies with negligible impact on wildlife. Alternative B would change the VRM designation in the Backcountry Zone from Class II to Class I (this class allows only for very limited types of management activities). This change in management could have a minor positive impact on habitat management and wildlife species. Alternative C would change the VRM designation in the portion of the Backcountry Zone south of Cooskie Creek to Class I, while leaving the area north of the Creek as Class II. This could result in minor positive impacts to wildlife south of Cooskie Creek and negligible impacts in other areas.

Alternative D would maintain the designation of Class III in the Frontcountry Zone, with negligible impact on wildlife. Alternative D would also maintain VRM Class II designation for the Backcountry Zone. This alternative could result in minor positive impacts to habitat management and wildlife.

4.6.2 Impacts to Wildlife from Cultural Resources Management

Under all alternatives, existing policies would remain in place to protect cultural resources, so there would be negligible impact on wildlife. Policies to maintain or increase monitoring, site patrols and collaboration with Native Americans under all alternatives would have negligible impact on wildlife. Policies encouraging surveying, regional overviews, stabilization of historic structures and development of National Register nominations under Alternative D would have negligible impact on wildlife.

4.6.3 Impacts to Wildlife from Lands and Realty

Policies to obtain lands and interests determined to be desirable for consolidation to facilitate management in Backcountry and Frontcountry Zones under all alternatives could have a minor to moderate long-term beneficial impact on wildlife by increasing the land base and providing greater protection to some habitats types (e.g., riparian zones will be managed to protect anadromous fish, thereby benefiting wildlife species within these habitats). Lands acquired in the Residential Zone will have minimal impacts on wildlife. Under Alternative B and C, policies to make the Backcountry Zone an

exclusion area for new rights-of-way and/or permits would have minor to moderate long-term benefits to wildlife by limiting habitat fragmentation and frequency of human disturbance. Under Alternative D rights-of-way and permits would be less restrictive and could have a minor to moderate long-term negative impact on wildlife by increasing habitat fragmentation and frequency of human disturbance in the Backcountry and Frontcountry.

4.6.4 Impacts to Wildlife from Inventory Units and Study Areas

4.6.4.1 Wild and Scenic Rivers

Alternative A would continue existing management policies along the rivers, and so would have negligible impact on wildlife populations. Protective management of various rivers under Alternatives B, C, and D would also have minor beneficial impacts on wildlife populations by affording an added level of protection of water quantity and quality and riparian habitat to meet wildlife needs.

4.6.4.2 Wilderness characteristic inventory units

All the alternatives would continue existing policies for management of lands currently designated as WSAs under the BLM's "Interim Management Policy (IMP) For Lands Under Wilderness Review" (H-8550-1) until Congressional designation as Wilderness or release from WSA status.

Wilderness characteristics will be protected on additional land (10,259 acres, Alternative B; 6,612 acres, Alternative C; and 200 acres, Alternative D) adjacent to the existing King Range and Chemise Mountain WSAs. This would have a major positive impact on wildlife in these areas.

4.6.4.3 ACECs

Alternatives A and B will continue current management of the 655 Acre Mattole Estuary ACEC. As no changes will be made to current management wildlife will not be impacted.

Alternatives C and D would designate the Mill Creek Watershed as an ACEC to protect the water quality of this important anadromous fish stream/cold water tributary to the Mattole River, and the low-elevation old-growth Douglas fir forest. This policy will have a major beneficial impact on wildlife.

4.6.5 Impacts to Wildlife from Aquatic Ecosystems and Fisheries Management

Under all alternatives, existing policies would remain in place to restore and maintain ecological health of watersheds and aquatic habitats and implement up-slope sediment reduction resulting in a minor to moderate long-term positive impact to wildlife species that occupy riparian habitats (e.g., riparian birds, aquatic amphibians). Implementation of estuary enhancement program in the Mattole Estuary would have a moderate long-term benefit to wildlife species including marine mammals and numerous species of birds.

4.6.6 Impacts to Wildlife from Wildlife Management

Under all alternatives, existing policies would remain in place to maintain and enhance natural wildlife populations, protect habitat, prevent damage, and increase public education. Alternative B, C, and D would encourage habitat for federally threatened western snowy plovers at the Mattole River mouth. The localized impacts could result in long term moderate positive effects.

Alternative B differs from current management (Alternative A) as it would drop periodic surveys for federally threatened northern spotted owls and would not increase suitable habitat. This change in management would have minor negative impacts on spotted owls within the KRNCA. Alternatives C and D would have a major positive impact on spotted owls as both would provide sufficient habitat to attract and maintain 20 breeding pairs.

Alternatives C and D would have minor positive impact for Steller's sea lions by protecting haul-out sites through cooperative management with the California Coastal National Monument.

Alternative C and D both plan to design and implement a long-term "all bird" monitoring plan that would provide managers data necessary to responsibly manage wildlife. In Alternative C this plan would be implemented opportunistically resulting in a moderate beneficial effect. Alternative D would design and implement the monitoring plan immediately; the long term effect could result in a major positive impact to some bird populations.

Alternative C and D would facilitate research and monitoring of wildlife populations within the KRNCA to increase the knowledge base. This would provide managers with species and local population data necessary to responsibly manage wildlife species within the KRNCA; the short term minor effect on wildlife would be positive; the long term effect could result in a major positive impact to some wildlife species.

Additionally, in Alternatives C and D BLM would work cooperatively with CDFG to maintain a natural diversity of intertidal organisms and educate visitors to intertidal habitat resulting in a long term major beneficial impact to wildlife using intertidal habitats.

4.6.7 Impacts to Wildlife from Terrestrial Ecosystems and Vegetation Management

Under all alternatives existing programs would be continued to eradicate invasive plant species, maintaining a mosaic of compositionally and structurally diverse habitat types; this would have a minor to moderate beneficial impact on a wide range of wildlife species. Alternative C and D would have a moderate positive impact to wildlife; Alternative D would be slightly more beneficial as it would manage for higher quality habitats resulting in a greater natural diversity of native wildlife within the King Range.

4.6.8 Impacts to Wildlife from Forest Management

Under all alternatives, existing policies would remain in place to maintain and enhance old growth forests, resulting in a positive impact on old-growth dependant wildlife. Goals to conduct silvicultural treatments and promote forest restoration (tree planting) under Alternatives B, C, and D could have a minor, short-

term negative impact on some wildlife, but should have a moderate long-term positive impact. Alternative D would allow silvicultural treatments and post-fire salvage operations, reopening old logging roads and build new temporary roads; this could have a moderate negative localized impact to wildlife species by causing habitat fragmentation, and removal of downed woody debris and snags which are important components of forest ecosystems and beneficial to wildlife.

4.6.9 Impacts to Wildlife from Special Forest Products Management

Issuance of permits to collect mushrooms, beargrass, floral trade species, and fuelwood proposed under all alternatives would have a negligible effect on wildlife.

4.6.10 Impacts to Wildlife from Grazing Management

Under Alternatives A, C, and D, existing policies would remain in place to preclude loss or reductions in grazing allotments or AUMs, resulting in no changes to current rangeland management and negligible impact to wildlife.

Under Alternative B, all livestock grazing would be eliminated from the King Range. This could result in a minor localized positive impact on some wildlife species. However, depending on the intensity of management after removal of livestock grazing, there could be minor to moderate localized negative impacts on 'prairie' associated wildlife such as raptors and small carnivores.

4.6.11 Impacts to Wildlife from Fire Management

Activities common to all alternatives would have minor positive long term effects on wildlife, due to reduction in the risk of fire. The geographic extent of this effect would depend on the number and extent of future fires and the associated rehabilitation.

Under Alternative A, moderate long-term negative effects are anticipated on wildlife, especially in the Backcountry Zone as aggressive suppression can lead to increased fuel levels, habitat changes, and the potential for stand replacing fires. In addition, aggressive suppression activities could have a moderate localized negative impact on wildlife, depending on the nature and extent of a fire and its suppression activities. Some of these effects could have a long-term negative effect on wildlife populations.

Suppression of fires within the Residential Zone under Alternative B would have negligible impact on wildlife. Alternative B would likely have a long-term moderate to major positive impact on wildlife populations, depending on the size and extent of future fires. It is possible that long-term negative impacts could occur locally as a result of the loss of valuable wildlife habitat to a fire, but re-establishing the natural role of fire would have moderate to major positive long-term effects on wildlife as a result of creating a landscape resistant to intense and/or stand-replacing type fires.

Under Alternative C, effects to wildlife in the Backcountry would be the same as under Alternative B, but Frontcountry activities could lead to minor, long-term negative effects on wildlife in that zone, negatively impacting wildlife that depends on snags and downed woody debris. Alternatives C and D would utilize prescribed fire and mechanical methods in the Frontcountry Zone to manage fuels, which could have a moderate long-term beneficial impact on wildlife.

4.6.12 Impacts to Wildlife from Transportation and Access

All alternatives would continue existing policies to provide a network of roads that complement the rural character of the King Range, so there would be negligible impact on wildlife.

4.6.13 Impacts to Wildlife from Recreation

All four alternatives would continue existing policies regarding visitor information, road and trail maintenance, resource protection, visitor safety, special recreation permits, cooperative management, exclusionary fence and barrier construction, enforcement, and Universal Accessibility Standards, so there would be negligible impact on wildlife. Alternatives C and D would increase the visitor use allocation system to allow moderate (Alternative C) and higher use numbers (Alternative D) in the Backcountry and Frontcountry Zones. This increase in use could have a minor to moderate negative impact on sensitive wildlife species, especially during the spring/summer breeding season.

Alternative C and D would prohibit motorized watercraft landings, with the exception of emergencies and work cooperatively to establish parameters for commercial touring flights over the KRNCA, and to discourage low-flying aircraft. Both policies would greatly benefit marine wildlife such as seabirds and marine mammals roosting or breeding within the King Range.

4.6.14 Impacts to Wildlife from Interpretation and Education

All the alternatives would continue existing policies to provide information to visitors and could have a minor to major beneficial impact on sensitive wildlife.

4.6.15 Potential Cumulative Impacts to Wildlife

The KRNCA, in conjunction with the nearby Sinkyone Wilderness State Park, Gilham Butte Public Lands, and Humboldt Redwoods State Park, provides a protected corridor for the movement of wide-ranging, dispersing, and migratory animals, which is a moderate positive cumulative impact. For the northern spotted owl in particular, the study area for cumulative impacts is the entire California Coastal Province. The KRNCA is one of several public land areas with designated critical habitat. Managed in a coordinated fashion with these other areas, the King Range contributes to a solid chunk of habitat for this species, as well as other species associated with the same ecosystem type. In contrast, private lands in the province are generally managed intensively for timber production, which provide very limited suitable habitat. This represents a major beneficial cumulative impact.

4.7 IMPACTS TO TERRESTRIAL ECOSYSTEMS AND VEGETATION RESOURCES

Impacts on the vegetation resources of the King Range are variable, as these resources are present in one form or another throughout the entire study area. The BLM is responsible for assessing the effects of any proposed activities associated with the various resource management activities and to insure that any

effects from these activities do not result in significant adverse effects to these species under current and proposed management regimes.

4.7.1 Impacts to Terrestrial Ecosystems and Vegetation Resources from Visual Resource Management

The impacts from the visual resources would likely not impact the vegetation under any of the alternatives, as the conditions imposed by all of these alternatives appreciate the integrity of the vegetation as a fundamental element of the viewshed.

4.7.2 Impacts to Terrestrial Ecosystems and Vegetation Resources from Cultural Resources Management

Impacts to the vegetative resources from cultural resources management would be common across all alternatives, and most likely be long-term and very localized (site-specific). The impact would be negative, from negligible to minor, and most likely as a result of efforts to stabilize or prevent environmental degradation to important sites. The impact would come both as a result of the efforts to stabilize, and possibly also from indirect effects as a result of the alteration of the natural vegetation successional processes due to such stabilization efforts.

4.7.3 Impacts to Terrestrial Ecosystems and Vegetation Resources from Lands and Realty

The only foreseen impact on the vegetation of the King Range from the management of Lands/Realty Resources would be an increased level of habitat management requirements, particularly if new acquisitions include populations of sensitive species, or suitable habitat contiguous with known occurrences of such species. These impacts would be minor to moderate and positive as vegetation stands are managed over a larger area and in a more comprehensive manner. The amount of lands acquired increases from Alternative A to D, as would the relative impact of management mentioned above.

4.7.4 Impacts to Terrestrial Ecosystems and Vegetation Resources from Inventory Units and Study Areas

All alternatives (except for A) provide for protective management of Wild and Scenic Rivers, wilderness characteristics, and ACEC values and would likely have long-term moderate positive effects.

4.7.5 Impacts to Terrestrial Ecosystems and Vegetation Resources from Aquatic Ecosystems and Fisheries Management

All proposed watershed enhancement project alternatives relative to aquatic and fisheries resources should have a similar level of impact to the vegetation resources of the King Range, and are likely to result in long-term moderate beneficial impacts to all affected habitats.

Upslope sediment reduction (road decommissioning, landslide rehabilitation, and road drainage maintenance and upgrades) activities could have short-term adverse impacts to sensitive botanical species associated with these elements, but would likely be outweighed by the overall moderate long-term beneficial impacts that would result, and that contribute to the overall watershed integrity. Instream habitat enhancement improvement projects would likely only pose negligible, localized adverse impacts to sensitive botanical species and habitats, if any.

Thinning projects associated with riparian silviculture activities could have long-term localized minor to moderate adverse impacts to sensitive botanical species that might occur in these habitats, but would also result in moderate long-term benefits to habitat quality.

4.7.6 Impacts to Terrestrial Ecosystems and Vegetation Resources from Wildlife Resource Management

All proposed alternatives for management of the Wildlife Resources should have a negligible effect on the vegetative resources, aside from those addressed in the vegetation management section.

4.7.7 Impacts to Terrestrial Ecosystems and Vegetation Resources from Terrestrial Ecosystems and Vegetation Resource Management

4.7.7.1 Impacts to Habitats

The impacts to the different dominant habitats in the King Range vary with each alternative, but on the whole, offer beneficial impacts as the alternatives specify various levels of management activities to maintain and encourage a diversity of native habitats, with the exception of Alternative A.

Alternatives A and B are likely to have impacts common to all habitats. Alternative A carries forward the current level of habitat management, which does not specify particular prescriptions, and is a more passive approach that allows for current “habitat-degrading” trends (e.g., succession in “prairie” habitats) to continue. Alternative B offers more of a positive impact in that it allows for specific management for the various habitats.

Alternative C would have a minor to moderate positive impact to the coastal dunes, scrub, and grassland habitats because it would implement some level of monitoring and allow for a wider diversity of management activities (prescribed burning, manual means, and limited grazing) to be utilized to contribute to “within-habitat diversity.”

Alternative D would have the most beneficial impact of all the alternatives for both coastal dunes and coastal scrub, by restricting habitat-degrading activities in the dunes and implementing a more rigorous habitat monitoring plan, and by allowing for an additional management prescription in the coastal scrub (mechanical means), but the beneficial impact would be similar to both coastal grassland and chaparral habitats.

With respect to management of invasive plant species and sudden oak death, all alternatives should have a similar minor to moderate beneficial impact on all habitat types.

4.7.7.2 *Special-Status Plant Species*

All alternatives share the common goal of maintaining viable and healthy populations of Special Status species, a management program that will undoubtedly benefit these species. The various levels of management activities proposed in the various alternatives will have differential impacts on Special Status species. These management prescriptions have the potential to cause short-term adverse effects on these species, but would result in long-term benefits, by increasing the quality of the associated habitats.

Alternative A could potentially have long-term moderate adverse effects as a result of the “habitat-degrading” trends discussed above. Alternative B would have minor impacts discussed above, with an increase in the extent of the impact to moderate from Alternative C to Alternative D, the latter having the most significant effects.

With respect to management of invasive plant species and sudden oak death, all alternatives should have a similar long-term beneficial impact on Special Status species, although the extent of the short-term negative impact will vary with the mechanism utilized in the removal of invasive plant species.

4.7.8 Impacts to Terrestrial Ecosystems and Vegetation Resources from Forest Management

Forest improvement projects designed to accelerate the development of late-seral forest stand characteristics that are proposed in (and common to all three) Alternatives B, C, and D could cause short-term minor to moderate adverse impacts to Special Status plant species, but would likely result in moderate long-term beneficial effects to both these habitats and any associated Special Status species. Alternative A would avoid both of these short- and long-term impacts, but would, alternatively, avoid the long-term adverse impacts associated with the timber salvage activities proposed in Alternatives C and D.

Both Alternatives C and D could have moderate, short-term adverse impacts on Special Status plant species as a result of timber salvage activities, with Alternative D having the larger impacts due to the level of road construction and maintenance. However, botany clearances would be conducted prior to operations, and salvage would only be conducted for benefits to ecosystem management objectives, so long-term impacts would be negligible or beneficial.

4.7.9 Impacts to Terrestrial Ecosystems and Vegetation Resources from Special Forest Products Management

Alternatives A, C, and D could have minor adverse impacts on Special Status plant species (particularly fungi) and habitats if habitat-destructive mushroom harvest methods are used illegally, particularly as a result of commercial collection. Alternative B is likely to have negligible impacts to vegetative resources.

All other aspects of special forest products management, common across all alternatives, would likely have a negligible impact on the vegetation resources.

4.7.10 Impacts to Terrestrial Ecosystems and Vegetation Resources from Grazing Management

Impacts related to grazing management will be localized to the grassland and scrub habitats that occur in the specific allotments. The effects of grazing on the native species diversity and abundance of grasslands vegetation has been shown to be quite variable (Harrison et al. 2003, Jutila 1999, etc.). The level of grazing proposed in Alternatives A, C, and D (all the same) allow for an appropriate level of disturbance necessary to maintain these habitats and therefore represent a moderate positive long term impact on grassland habitats. These alternatives also exclude grazing from specific areas where this activity compromises the integrity of the unstable substrates, an added beneficial impact to this habitat. It is anticipated that the proposed level of grazing would have only negligible impacts to the scrub habitats.

Alternative B would result in a moderate to major long term, adverse impact to grassland habitats, as it could remove a level of disturbance necessary to maintain current levels of these early successional habitats and the associated diversity of native species, without providing for any replacement of the needed disturbance (such as grazing by other ungulates, or more intensive vegetation management).

Some Special Status plant species occur or have the potential to occur in these habitats. The relative contribution of grazing towards maintaining these early successional habitats that will continue to be available to these species is believed to mitigate any lesser adverse impacts to Special Status species as a result of grazing, and is therefore considered a beneficial impact on these species.

4.7.11 Impacts to Terrestrial Ecosystems and Vegetation Resources from Fire Management

The use of fire as a management tool is well documented, although the effects can be quite variable. For the most part, fire will help to maintain a diversity of naturally occurring habitat types and also any associated Special Status species. Although some short-term minor to moderate negative impacts could occur as a result of wildfire and prescribed burns, the long-term positive effect they have on habitat maintenance would likely be moderately beneficial both to these habitats, and any associated sensitive flora. All alternatives prescribe the completion and maintenance of fuel breaks, which could pose local negative impacts to sensitive botanical species, particularly those species with unique dispersal limitations.

Alternative A specifies all fire suppression in all management zones which would result in negative impacts to all habitat types, except possibly coastal dunes, by removing a major mechanism of habitat maintenance. The lack of fire would have a moderate long term negative effect on both the extent and native species diversity of these habitats.

Alternative B allows for wildfires to occur in all but the residential management areas. This would likely result in minor to moderate long term beneficial impacts to habitats and associated sensitive species to the majority of the King Range, depending on the nature and extent of future fires. The exclusion of prescribed burns as a management tool, and reliance on naturally occurring wildfires in this alternative reduces the positive aspects of this alternative in that it gives up a level of precision in the use of fire as a vegetation management tool.

Alternative C allows for wildfires to occur only in the Backcountry, but does allow for the use of prescribed burns to manage specific habitats in all zones. This alternative would result in positive impacts to all habitats and associated sensitive species, particularly in the level of precision allowed for the use of fire as a vegetation management tool. The suppression of naturally occurring fires in the Frontcountry does detract from the positive impacts (variation in burn area, intensity, etc.) to the diversity of habitats in this management zone as a result of such an event.

Alternative D prescribes suppression of all fires in all management zones. This alternative does allow for the use of prescribed burns to manage specific habitats. This alternative would result in minor benefit to all habitats and associated sensitive species in that the prescribed burns would lend precision to the use of fire as a management tool. The suppression of naturally occurring fires in the all management zones, however, reduces the potential positive impacts (variation in burn area, intensity, etc.) that result from of naturally occurring fires event.

4.7.12 Impacts to Terrestrial Ecosystems and Vegetation Resources from Transportation and Access

The creation and maintenance of access roads/trails and associated parking areas across all areas has the potential to have long term moderate adverse localized impacts on sensitive species.

Alternative A would likely result in a moderate negative effect to the vegetation by allowing continued vehicle access to the sensitive areas in the vicinity of the Mattole River Estuary. Alternative B would benefit estuary resources by closing this route. Roughly 3.2 miles of road decommissioning in the Telegraph Ridge area as a result of this alternative could cause some short-term localized adverse impacts to Special Status plant species, but would likely result in long-term beneficial effects to the watershed, associated habitats, and subsequently, any associated sensitive botanical species.

Alternative C would reduce existing impacts to habitat quality and Special Status plant species known to occur in the vicinity of the Mattole River Estuary, by reducing off-road access in this area.

Alternative D could result in minor adverse impacts to habitat quality and Special Status plant species. This alternative would require road improvements and upgrades in the Telegraph Ridge, Paradise Ridge, Windy Point, and Smith-Etter Roads which could cause short-term impacts, although most improvements would occur on the existing road prism. This alternative would provide minimal protection and allow continued impacts to the botanically sensitive Mattole River Estuary (although it would reduce access over Alternative A).

4.7.13 Impacts to Terrestrial Ecosystems and Vegetation Resources from Recreation

Alternative A could have a moderate adverse long term impact to habitat quality and Special Status plant species, as a result of current management of recreational resources proving to be inadequate for an increase in use of the King Range.

Alternative B would likely have moderate long term beneficial impact on the vegetative resources of the King Range resulting from restrictions on group size, facility use, access by mountain bikes, a reduction in the extent of usable facilities and locations, and the lack of proliferation of new trails and facilities.

Alternative C would likely result in a variety of impacts. Some would have a minor beneficial effect, such as the restrictions in group size. Others would have a long term localized and non-localized minor negative adverse impacts. Localized impacts would result from the construction of new trails and associated facilities. Non-localized adverse impacts would result from overall increased use, in addition to the type of use (i.e., mountain bikes).

Alternative D would result in long-term minor adverse impacts to habitat quality and Special Status plant species as a result of intensified use, trail additions (and associated impacts), and some limited new facility construction.

4.7.14 Impacts to Terrestrial Ecosystems and Vegetation Resources from Interpretation and Education

As long as interpretive signs and structures are appropriately located, Interpretive/Educational resource management is likely to have negligible effect on the vegetation across all alternatives, other than a positive effect as a result of increased appreciation for the vegetative resources.

4.7.15 Potential Cumulative Impacts to Terrestrial Ecosystems and Vegetation Resources

Under these alternatives, through management done in the KRNCA in concert with a County-wide noxious weed management strategy and associated private efforts, invasive weed rates of spread will be reduced. This represents a moderate beneficial cumulative impact. Similarly, coordinated efforts to reduce the spread of sudden oak death will result in positive cumulative impacts.

4.8 IMPACTS TO FOREST RESOURCES

Under all alternatives, policies described under the Northwest Forest Plan would remain in place to maintain and enhance the late successional characteristics of KRNCA forests. Alternative A would continue present management activities, which are primarily maintaining undisturbed late successional/old growth forests and taking minimal action to return late successional attributes to previously harvested stands or stands impacted by fire. Alternatives B, C, and D have increasing amount of active management designed to hasten the return of late successional attributes to forest stands and range from having a moderate to major positive long-term impact on KRNCA forests.

4.8.1 Impacts to Forest Resources from Visual Resources Management

Impacts from management of visual resources across all alternatives could have a minor short-term negative impact on forest ecosystem restoration as some alternatives may be limited, in so far as certain forest management activities are not visually pleasing. Alternative A would continue to keep the

Backcountry in the VRM Class II designation (management activities and uses can be seen but should not attract the attention of the casual observer) and allotments in the other zones in VRM Class III (management activities may attract attention but should not dominate the view of the casual observer). Because this would continue existing visual policies, there would be no impact on forest management.

Alternatives B and C would keep the Frontcountry Zone in the Class III designation, a continuation of existing policies with negligible impact on forest management. Alternative B would change the VRM designation in the Backcountry Zone from Class II to Class I (this class allows only for very limited types of management activities). Alternative C would change the VRM designation in the portion of the Backcountry Zone south of Cooskie Creek to Class I, while leaving the area north of the Creek as Class II. This could result in negligible negative impacts south of Cooskie Creek and minor negative impacts in other areas.

Alternative D would maintain the designation of Class III in the Frontcountry Zone, with negligible impact on forest resources. Alternative D would maintain the Backcountry Zone VRM Class II designation. This alternative would result in negligible impacts to forest management because there are no proposed forest management projects in the Backcountry Zone.

4.8.2 Impacts to Forest Resources from Cultural Resources Management

Under all alternatives, existing policies would remain in place to protect cultural resources, so there would be negligible impact on forest management. Policies to maintain or increase monitoring, site patrols and collaboration with Native Americans under all alternatives could have minor negative short-term impacts on forest restoration activities, if management alternatives were restricted. Policies encouraging surveying, regional overviews, stabilization of historic structures and development of National Register nominations under Alternative D would have negligible impact on forest ecosystems.

4.8.3 Impacts to Forest Resources from Lands and Realty

Policies to obtain lands and interests determined to be desirable for consolidation to facilitate management in Backcountry and Frontcountry Zones under all alternatives could have a minor to moderate long-term positive impact on forest management activities by increasing the land base and providing greater opportunities for forest rehabilitation. Lands acquired in the Residential Zone will have minimal impacts on forest management activities.

4.8.4 Impacts to Forest Resources from Inventory Units and Study Areas

4.8.4.1 Wild and Scenic Rivers

Alternative A would continue existing management policies along the rivers, and so would have negligible impact on forest management activities. Designation of various rivers under Alternatives B, C, and D, would also have negligible impacts on forest management activities, since existing policies already determine forest management activities in and around watercourses.

4.8.4.2 Wilderness

All the alternatives would continue existing policies for management of lands currently designated as WSAs under the BLM's "Interim Management Policy (IMP) For Lands Under Wilderness Review" (H-8550-1) until Congressional designation as Wilderness or release from WSA status.

Wilderness characteristics will be protected on additional land (10,259 acres, Alternative B; 6,612 acres, Alternative C; and 200 acres in Alternative D) adjacent to the existing King Range and Chemise Mountain WSAs. Alternatives B and C will have minor negative impact on forest restoration goals in these areas by precluding forest management activities in previously harvested stands within the recommended unit lands.

4.8.4.3 ACECs

Alternatives A and B will continue current management of the 655 acre Mattole Estuary ACEC. As no changes will be made to current management, forest management activities will not be impacted.

Alternatives C and D would designate the Mill Creek Watershed as an ACEC to protect the water quality of this important anadromous fish stream/cold water tributary to the Mattole River, and the low-elevation old-growth Douglas fir forest. This policy could have a positive impact on forest resources, and would not preclude BLM from proposing low-impact forest management projects in the future.

4.8.5 Impacts to Forest Resources from Aquatic and Fisheries Management

Under all alternatives, existing policies would remain in place to restore and maintain ecological health of watersheds and aquatic habitats and implement up-slope sediment reduction resulting in a potential minor long-term negative impact to forest management activities.

4.8.6 Impacts to Forest Resources from Wildlife Management

Under all alternatives, existing programs will continue to protect wildlife during forest management activities, resulting in negligible impact to forest management.

4.8.7 Impacts to Forest Resources from Terrestrial Ecosystems/Vegetation Management

Under all alternatives existing programs would be continued to eradicate invasive plant species, maintaining a mosaic of compositionally and structurally diverse habitat types; this would have a negligible impact on forest management activities.

4.8.8 Impacts to Forest Resources from Forest Management

Under all alternatives, existing policies would remain in place to maintain and enhance old growth forests, resulting in a major positive impact on forest ecosystem management and restoration. Goals to conduct silvicultural treatments and promote forest restoration (tree planting) under Alternatives B, C, and D would have a long-term positive impact. Alternative D would allow silvicultural treatments and post-fire

salvage operations, reopen old logging roads, and build new temporary roads; these actions would only be conducted if they were anticipated to have a moderate to major positive impact to forest management and ecosystem restoration.

4.8.9 Impacts to Forest Resources from Special Forest Products Management

Issuance of permits to collect mushrooms, beargrass, floral trade species, and fuelwood proposed under all alternatives would have a negligible effect on forest resources and management activities, and a minor to moderate positive effect on special forest products.

4.8.10 Impacts to Forest Resources from Grazing Management

Under Alternatives A, C, and D, existing policies would remain in place to preclude loss or reductions in grazing allotments or AUMs, resulting in no changes to current rangeland management and negligible impact to forest resources.

Under Alternative B, all livestock grazing would be eliminated from the King Range. This would have a minor impact on forest resources. The acreage of forested lands would likely increase as trees encroach upon coastal prairies formerly kept open by grazing.

4.8.11 Impacts to Forest Resources from Fire Management

Activities common to all alternatives would have minor positive long term effects on forest management activities, due to reduction in the risk of fire. The geographic extent of this effect would depend on the number and extent of future fires and the associated rehabilitation.

Under Alternative A, negligible effects are anticipated on forest management activities, especially in the Backcountry Zone. Aggressive suppression activities could have a moderate localized negative impact on forest management, depending on the nature and extent of a fire and its suppression activities. Some of these effects could have a long-term negative effect on forest management.

Suppression of fires within the Residential Zone under Alternative B would have negligible impact on forest ecosystems. Alternative B would likely have a long-term moderate positive impact on forest resources, depending on the size and extent of future fires. It is possible that long-term negative impacts could occur locally as a result of the loss of valuable forests to a fire, but re-establishing the natural role of fire would have moderate to major positive long-term effects on forest management as a result of creating a landscape resistant to intense and/or stand-replacing type fires.

Under Alternative C, effects to forest management in the backcountry would be the same as under Alternative B, but Frontcountry Zone activities could lead to minor, long-term positive effects on forest management in that zone. Alternatives C and D would utilize prescribed fire and mechanical methods in the Frontcountry Zone to manage fuels; this could have a moderate long-term beneficial impact on forest resources.

4.8.12 Impacts to Forest Resources from Transportation and Access

All alternatives would continue existing policies to provide a network of roads that complement the rural character of the King Range, so there would be negligible impact on forest management.

4.8.13 Impacts to Forest Resources from Recreation

All four alternatives would continue existing policies regarding visitor information, road and trail maintenance, resource protection, visitor safety, special recreation permits, cooperative management, exclusionary fence and barrier construction, enforcement, and Universal Accessibility Standards, so there would be negligible impact on forest management activities. Alternatives C and D would increase the visitor use allocation system to allow moderate (Alternative C) and higher use numbers (Alternative D) in the Backcountry and Frontcountry Zones. This increase in use could have a minor negative impact on forest resources.

4.8.14 Impacts to Forest Resources from Interpretation and Education

All the alternatives would continue existing policies to provide information to visitors and could have a minor to moderate beneficial impact on forest management activities.

4.8.15 Potential Cumulative Impacts to Forest Resources

Efforts to maintain and increase old-growth forest habitat in the KRNCA, and linking this habitat to other old-growth forest areas in the region (Humboldt Redwoods State Park, Gilham Butte, Sanctuary Forest), will result in a moderate beneficial cumulative impact to late successional forest management. Removal of certain tracts of timber from the regional forest harvest base through combined efforts of land conservancies, the BLM, and other public agencies will result in minor cumulative impacts to the forest products production (see Lands and Realty section for anticipated land/easement acquisition acreage in the area).

4.9 IMPACTS TO GRAZING RESOURCES

Under all alternatives, with the exception of Alternative B which eliminates livestock grazing in the King Range, decisions relating to grazing management are constrained by current BLM grazing regulations and the California Standards for Rangeland Health and Guidelines for Livestock Management. Grazing management decisions are based on existing allotment management plans.

4.9.1 Impacts to Grazing Resources from Visual Resources Management

Alternative A would continue to keep the allotments on the western coastal slope in the VRM Class II designation (management activities and uses can be seen but should not attract the attention of the casual observer) and allotments in the other zones in VRM Class III (management activities may attract attention but should not dominate the view of the casual observer). Because this would continue existing visual policies, there would be no impact on grazing resources.

Alternatives B and C would keep the Frontcountry Zone in the Class III designation, a continuation of existing policies with no impact on grazing resources. Alternative B would change the VRM designation in the Backcountry Zone from Class II to Class I (this class allows only for very limited types of management activities). VRM Class I designation would not preclude livestock grazing, as this activity is part of the characteristic cultural landscape in the northern part of the KRNCA. However, designation would cause moderate impacts to grazing management, as it would limit the locations and extent of the construction of fencing and other needed improvements. A Class I designation would also require use of historic/native materials (wooden fence posts etc.) in construction of improvements which would cause cost increases to livestock operators. Alternative C would change the VRM designation in the portion of the Backcountry Zone south of Cooskie Creek to Class I, while leaving the area north of the Creek as Class II. This would result in only minor impacts to grazing management since almost all of the fencing and other allotment improvements would be located north of Cooskie Creek.

Alternative D would maintain the designation of Class III in the Frontcountry Zone, with no impact on grazing resources. Alternative D would maintain the Backcountry Zone VRM Class II designation. Although grazing activities are consistent with VRM designation II, possibly requiring slight modifications to future improvements, could result in a minor adverse impact on grazing resources.

4.9.2 Impacts to Grazing Resources from Cultural Resources Management

Under all alternatives, existing policies would remain in place to protect cultural resources from grazing impacts, so there would be no impact on grazing management. Policies to maintain or increase monitoring, site patrols and collaboration with Native Americans under Alternatives A, B, C, and D would have no impact on grazing resources. Policies encouraging surveying, regional overviews, stabilization of historic structures and development of National Register nominations under Alternative D would have negligible impacts on grazing resources, unless they required fencing off some site areas, which could have a minor negative impact.

4.9.3 Impacts to Grazing Resources from Lands and Realty

Policies to obtain lands and interests determined to be desirable for consolidation to facilitate management in Backcountry and Frontcountry Zones under all alternatives could have a minor beneficial impact on grazing resources by increasing grazing operator flexibility. Policies to consider new rights-of-way for roads in the Frontcountry Zone under Alternative B and C and in all zones under Alternative D could have a minor beneficial impact on grazing resources by increasing grazing operator flexibility.

4.9.4 Impacts to Grazing Resources from Inventory Units and Study Areas

Under all alternatives, there would be no impact on grazing resources from Wild and Scenic River designations because authorized livestock grazing use is compatible with that designation and protection of wild and scenic river values under that designation is subject to valid existing rights.

Under all alternatives, there would be no impact on grazing resources from protective management for wilderness characteristics because grazing is a valid use in wilderness.

Under all alternatives there would be no impact on grazing resources from Areas of Critical Environmental Concern (ACEC) designations because no active grazing allotments occur in the proposed Mill Creek Watershed ACEC.

4.9.5 Impacts to Grazing Resources from Aquatic Ecosystems and Fisheries Management

Under all alternatives, existing policies would remain in place to restore and maintain ecological health of watersheds and aquatic habitats and implement up-slope sediment reduction, so there would be no impact on grazing resources.

4.9.6 Impacts to Grazing Resources from Terrestrial Ecosystems and Vegetation Management

Under all alternatives existing programs would be continued to eradicate invasive plant species, thereby potentially leading to slight improvements in forage quality. This could result in a minor beneficial impact on grazing resources. Under Alternative B, prescribed fire and manual tree removal would be used to maintain healthy and productive grasslands; this could result in minor beneficial impacts to grazing resources. Under Alternatives C and D, prescribed fire, limited conservation grazing outside of existing grazing allotments, and native grass enhancement projects would be used to maintain healthy and productive grasslands; this could result in moderate beneficial impacts to grazing resources.

4.9.7 Impacts to Grazing Resources from Wildlife Management

Under all alternatives, existing policies would remain in place to maintain and enhance natural wildlife populations. Also, existing policies would remain in place to minimize or eliminate the need for listing of additional species under the ESA and to contribute to the recovery of listed species. Because these alternatives would continue existing policies, there would be no impact on grazing resources. Actions specific to various listed species identified under all alternatives would not affect grasslands within active grazing allotments, so would result in no impact on grazing resources. Policies enacted under Alternatives C and D to facilitate research and monitoring of wildlife would have no impact on grazing resources.

4.9.8 Impacts to Grazing Resources from Forest Management

Under all alternatives, existing policies would remain in place to maintain and enhance old growth forests; as this would not affect grazing allotments, there would be no impact on grazing resources. Goals to conduct silvicultural treatments and promote forest restoration (tree planting) under Alternatives B, C, and D would not affect the grasslands within the active grazing allotments, so there would be no impact on grazing resources from forest management.

4.9.9 Impacts to Grazing Resources from Special Forest Products Management

Issuance of permits to collect mushrooms, beargrass, floral trade species, and fuelwood proposed under all alternatives would not affect the grasslands within the active grazing allotments, so there would be no

impact on grazing resources from special forest products. Policies to monitor mushroom collection methods, coordinate with local tribes regarding use of beargrass, and active management of beargrass resources proposed in Alternatives C and D would also have no impact on grazing resources.

4.9.10 Impacts to Grazing Resources from Grazing Management

Under Alternatives A, C, and D, existing policies would remain in place to preclude loss or reductions in grazing allotments or AUMs, resulting in no impact on grazing resources. Under Alternatives A, C, and D, the Spanish Flat allotment boundary would be adjusted to exclude 500 acres of a terraced prairie between Spanish and Randall Creeks to protect significant cultural sites, but the number of Animal Unit Months (1,105 AUMs) would remain unaltered. Because this only represents about a 5% decrease in size of this allotment, and the Residual Dry Matter (RDM) target levels have been consistently exceeded on this allotment (implying more than adequate levels of forage), the adverse impact on grazing resources would be minor. Under Alternatives A, C, and D, four expired grazing leases would be administratively changed from available to unavailable for grazing. Because these leases are inactive and have not been used for grazing for several years, and are unsuitable for livestock grazing because of forest regrowth, this would have no impact on grazing resources.

Under Alternative B, all livestock grazing would be eliminated from the King Range. The four active grazing allotments would be eliminated, and livestock grazing levels would be reduced from 2,050 AUMs to zero. This would result in a major adverse impact on grazing resources, and a social and economic impact to several livestock operators.

4.9.11 Impacts to Grazing Resources from Fire Management

Because Alternative A would continue existing policies to fully suppress all fires regardless of cause within all zones, there could possibly be minor negative impacts on grazing resources, lost to spreading forest habitats. Suppression of fires within Residential Zone under Alternative B would have no impact on grazing resources because there are no grazing allotments within that zone. Alternative B would manage fuels for variable intensity wildfires in the Backcountry Zone. By creating a landscape resistant to damaging high intensity wildfires, this could have a minor beneficial impact on grazing resources in that zone. Alternative C would suppress all fires in the Frontcountry, a continuation of existing policies in that zone with no impact on grazing resources. Alternatives C and D would utilize prescribed fire in the Frontcountry and Backcountry Zones for unique habitat improvement such as maintaining coastal prairies in an early successional stage. This would have a significant beneficial impact on grazing resources in those zones.

4.9.12 Impacts to Grazing Resources from Transportation and Access

All alternatives would continue existing policies to provide a network of roads that complement the rural character of the King Range, so there would be no impact on grazing resources.

4.9.13 Impacts to Grazing Resources from Recreation

All four alternatives would continue existing policies regarding visitor information, road and trail maintenance, resource protection, visitor safety, special recreation permits, cooperative management,

exclusionary fence and barrier construction, enforcement, and Universal Accessibility Standards, so there would be no impact on grazing resources. Alternatives C and D would increase the visitor use allocation system to allow moderate (Alternative C) and higher use numbers (Alternative D) in the Backcountry Zone. This would increase the potential for vandalism of grazing management facilities (fences, water developments etc.) from recreational visitors, but the allotments in this zone are not located near heavily used trails, so this would only cause a minor adverse impact. Alternative C and D would also allow heavier visitor use in the Frontcountry Zone, but allotments in this zone are also not located in proximity to heavily used trails, so the impact to grazing resources from potential vandalism would be minor in that zone also.

4.9.14 Impacts to Grazing Resources from Interpretation and Education

All the alternatives would continue existing policies to provide information to visitors, so there would be no impact on grazing resources.

4.9.15 Potential Cumulative Impacts to Grazing Resources

Cumulative impacts to grazing resources are expected to be negligible or nonexistent.

4.10 IMPACTS TO FIRE MANAGEMENT

Under all alternatives, Fire Management program and activities are guided and constrained by existing fire management policies that are contained in BLM national regulation, state directives, unit management plans and supplemented by cooperative agreements for fire protection.

4.10.1 Impacts to Fire Management from Visual Resources Management

Under all alternatives, the Visual Resources Management program will have no impacts on the Fire Management program.

4.10.2 Impacts to Fire Management from Cultural Resources Management

Under all alternatives, the Cultural and Historic Resources management program with its existing and proposed policies will have negligible impacts on the Fire Management program.

4.10.3 Impacts to Fire Management from Lands and Realty

Under all alternatives, the Lands and Realty management program will have minimal impacts on the Fire Management program. Acquisition of additional lands surrounding the KRNCA could have minor beneficial impacts by increasing the opportunities for implementing the fuels management/fuel break program.

4.10.4 Impacts to Fire Management from Inventory Units and Study Areas

Under all alternatives, the Wild and Scenic River protective management and ACEC designations will have no impact on the Fire Management program. In Alternatives B and C, protective management of wilderness characteristic inventory units would not preclude fire and fuels management activities in situations where private land protection, public safety and other priority issues arise. However, comprehensive fuels reduction activities would not be considered compatible with the protective management goals of the wilderness inventory subunits, resulting in moderate impacts to this aspect of the fire program.

4.10.5 Impacts to Fire Management from Aquatic Ecosystems and Fisheries Management

Under all alternatives, the existing policies for the Aquatic Ecosystems and Fisheries Management programs will remain in place for restoring and maintaining the ecological health of watersheds, aquatic habitats, and up-slope sedimentation reductions. The constraints found in these policies are considered in the current suppression and fuels management programs, and would be continued under implementation of any proposed alternative, thereby creating negligible impacts on the Fire Management program.

4.10.6 Impacts on Fire Management from Terrestrial Ecosystems and Vegetation Management

Under all alternatives, the Terrestrial/Vegetative Ecosystems Management programs will have negligible impacts on the Fire Management program.

4.10.7 Impacts to Fire Management from Wildlife Management

Under all alternatives, the Wildlife Management program requirements in habitat protection for marbled murrelets and northern spotted owls potentially conflicts with wildfire suppression actions and would have a minor impact on the Fire Management program. Under Alternatives C and D, the fuels management program activities would provide beneficial long-term effects that enhance vegetative conditions favorable for wildlife introduction for species such as the Roosevelt elk.

4.10.8 Impacts to Fire Management from Forest Management

Alternatives A and B would have no impacts on the Fire Management program. Under Alternatives C and D there are some beneficial effects to the Fire Management program as the development of mosaic and old growth patterns expand. These vegetative changes enhance the capability for the use of natural ignitions thereby allowing for the more natural role of fire to occur across the landscape.

4.10.9 Impacts on Fire Management from Special Forest Products Management

Under all alternatives, the Special Forest Products program will have no impacts on the Fire Management program.

4.10.10 Impacts to Fire Management from Grazing Management

Under all alternatives, the Grazing Management program will have no impacts on the Fire Management program.

4.10.11 Impacts to Fire Management from Fire Management

Under all alternatives, existing policies would remain in place and result in no impacts on the Fire Management program. In all alternatives, human caused fires will be suppressed. Under Alternatives B and C, re-establishing the natural role of fire in the Backcountry and Frontcountry Zones by allowing natural caused fires to burn within defined suppression actions and constraints provides a long-term beneficial effect to the Fire Management program. Under Alternatives C and D, prescribed burning (broadcast and pile burning) is used to reduce fuels and create mosaic vegetative patterns. Wildfires would burn with variable fire intensities across the landscape thereby minimizing damage associated with large high intensity fires and results in major long-term beneficial effects for the Fire Management program. Under Alternative B, no broadcast burning is allowed and results in a major negative impact to the Fire Management program. Under Alternatives C and D, the use of broadcast burning to expand the width of fuelbreaks provides a larger suppression structure and therefore an improved capability in suppression actions. This would provide a major long-term beneficial effect to the Fire Management program.

4.10.12 Impacts to Fire Management from Transportation and Access

Under Alternatives A, C, and D, the Transportation and Access Management program will have no impacts on the Fire Management program. Under Alternative B, the road closure and decommissioning of the Telegraph Ridge Road would have a moderate impact and a long-term effect on the Fire Management program. This road provides access to the area when suppression actions are required to address wildfires in the general area. This impact would be mitigated if an alternate route (Such as the ridgetop along Telegraph Ridge) were kept open as a fuel break/access route for fire vehicles for suppression efforts.

4.10.13 Impacts to Fire Management from Recreation

Under Alternative B, the Recreation Management program will have negligible impact on the Fire Management program. Under Alternatives A and C, minor impacts will occur because of the projected increase in use of recreation trails, camping, and developed campgrounds. Under Alternative D, a moderate impact would occur because the greatest projection of use is in this alternative. With increasing numbers of users there is a commensurate increase in wildfire occurrence and risk.

4.10.14 Impacts to Fire Management from Interpretation and Education

Under all alternatives, the Interpretation and Education programs will have minor to moderate beneficial impact on the Fire Management program as fire safety is a key message in KRNCA interpretive/educational programs.

4.10.15 Potential Cumulative Impacts to Fire Management

A number of organizations and agencies in Humboldt County—including local Fire Safe councils, State Parks, etc.—have recently been developing fuels management reduction plans. Improved management of fuels in the King Range will contribute to a moderate cumulative impact with these larger efforts.

4.11 IMPACTS TO TRANSPORTATION AND ACCESS

Under all alternatives, County roads within the KRNCA are public routes and are managed by Humboldt County, with the exception of a short segment of Chemise Mountain Road at the southern tip of the NCA, which is managed by Mendocino County. All other roads are managed under the jurisdiction of the BLM.

4.11.1 Impacts to Transportation and Access from Visual Resources Management

Under all alternatives, visual contrast ratings for existing roads and facilities would be conducted and opportunities for reducing existing visual impacts through modifications (e.g., painting culverts, removing road berms, etc.) identified. Modifications would serve to blend roads and facilities into the landscape, minimizing their visual impact and resulting in a minor, beneficial, localized impact. A complete inventory of existing and potential key scenic vistas along road and trail corridors would be undertaken and opportunities identified for enhancing these locations. Construction of scenic pullouts would result in moderate, beneficial, localized impacts to roads and facilities by increasing opportunities for viewing scenic vistas. Impacts to roads and facilities, including through modifications and construction of scenic pull-outs would be considered long-term.

Alternative A would continue the designation of the western coastal slope in the VRM Class II (management activities and uses can be seen but should not attract the attention of the casual observer), and the Uplands area classified as VRM Class III (management activities may attract attention but should not dominate the view of the casual observer). Because this continues existing visual policies, there would be no impact on transportation facilities.

Alternatives B and C would keep the Frontcountry Zone in the Class III designation, a continuation of existing policies with no impact on transportation facilities. Alternative B would change the VRM designation in the Backcountry Zone from Class II to Class I (this class allows only for very limited types of management activities) and would not impact existing roads or facilities. Designation of the Residential Zone as Class IV would allow for transportation improvements needed for vehicular safety and operations and would be a moderate, beneficial, localized impact. This impact would be long-term.

Alternative D would maintain the designation of Class III in the Frontcountry Zone, with no impact on transportation facilities. Alternative D would maintain the Backcountry Zone VRM Class II designation. The few administrative/inholder access roads in the Backcountry Zone are unimproved and there would be no impact resulting from this change in designation.

4.11.2 Impacts of Transportation and Access from Cultural Resources Management

Under all alternatives, policies proposed to protect cultural resources would have minor impacts to road maintenance activities by limiting road grading and facility construction near cultural and historic resources. Proposed policies to protect the character of historic resources, such as Chambers Ranch and hunting cabins located on King Peak Road, would impact transportation by limiting the extent of improvements allowed on those roads. This impact would be minor, localized, and long-term (no major road improvements are foreseen in any of the alternatives). In addition, policies to protect subsurface cultural resources under all alternatives would have a minor, localized, long-term impact to road grading and roadway improvements construction (culverts, crossings, etc.) activities by requiring avoidance of cultural resources.

4.11.3 Impacts to Transportation and Access from Lands and Realty

Under Alternative D, if access were acquired from a willing seller(s), Johnny Jack Ridge Road would be opened to a trailhead parking area near its intersection with Cooskie Creek. This impact would be moderate, localized, and long-term.

There would be no additional impacts on Transportation and Access from the Lands and Realty Program. All private land inholders are assured reasonable access to their properties through existing laws and statutes.

4.11.4 Impacts to Transportation and Access from Inventory Units and Study Areas

The Wild and Scenic Rivers or ACEC designations would have no impact on transportation, as roads that pass through or near those proposed areas are compatible with their management. Wilderness inventory units would also not impact transportation, as there are no roads in the proposed areas.

4.11.5 Impacts to Transportation and Access from Aquatic Ecosystems and Fisheries Management

Under all alternatives, existing policies for restoring and maintaining ecological health of watersheds and aquatic habitats and implementing up-slope sediment reduction would remain in place and would not create impacts to transportation. New standards and guidelines proposed under Alternatives B, C, and D could have minor, localized, long-term beneficial impacts to roadways crossing streams by possibly requiring changes to existing culverts. Alternatives A, B, and C would keep Smith-Etter Road closed to vehicles during the winter and would be a minor, localized, long-term impact.

4.11.6 Impacts to Transportation and Access from Terrestrial Ecosystems and Vegetation Management

Under Alternative A, general vegetation guidelines from current planning documents would remain. These vegetation guidelines would apply to transportation during road decommissioning activities, when

roads are revegetated. Continuation of the existing policies would not create an impact. Under Alternatives B, C, and D, specific management plans would be followed for individual habitat types. Roads would be revegetated following the guidelines listed for the specific habitat that the road passes through. This impact would be moderate, localized, and long-term.

4.11.7 Impacts to Transportation and Access from Wildlife Management

Under all alternatives, existing policies would remain in place regarding road maintenance to avoid disturbance of special status species. There would be no impact to transportation from continuation of these policies.

4.11.8 Impacts to Transportation and Access from Forest Management

Under all alternatives, decommissioned roads would be subject to reforestation through tree planting. Reforestation would eliminate decommissioned roads and simplify the road network. Since none of the routes are currently open to public access, there would be no impact. Under Alternative D, old logging roads may be reopened and new temporary roads built to remove burned or fire-killed lumber. This would temporarily expand the road network but would not affect public access. Although all temporary roads would be removed upon completion of the salvage operation and decommissioned and temporary roads revegetated, this impact would be major and long-term due to the time required for re-establishment of vegetation upon decommissioning.

4.11.9 Impacts to Transportation and Access from Special Forest Products Management

Permits are currently issued to collect special forest products in the KRNCA. Seasonal access of some roads (particularly Smith-Etter Road and Etter Road) would be extended under Alternative D. This impact would be moderate, localized, and long-term.

4.11.10 Impacts to Transportation and Access from Grazing Management

Use of some unimproved roads by grazing permittees (Johnny Jack Ridge, Telegraph Ridge, and Cooskie Creek) would continue under all alternatives. Several of these routes are in landslide-prone areas and subject to failure. If routes fail, permittee access opportunities would need to be reevaluated for alternatives. This could result in moderate localized impacts to these administrative routes. None of the other proposed grazing management policies would impact transportation.

4.11.11 Impacts to Transportation and Access from Fire Management

All alternatives propose completing and maintaining a planned fuel break system. Some roads in the KRNCA are considered fuel breaks (King Range Road, Smith-Etter Road, Paradise Ridge Road, and Saddle Mountain Road) and would be maintained as part of the system. Inclusion of roads as part of the fuel break system would require consideration of impacts to fuel breaks in any discussion of modifications to road alignments or potential decommissioning actions. This impact would be minor and long-term.

4.11.12 Impacts to Transportation and Access from Transportation and Access

Under all alternatives, Prosper Ridge, Noonung Creek, and King Range Roads would have a limited designation and would be open year-round to all vehicle types. Finley Ridge Road would be open year-round to 4-WD vehicles. This would be a continuation of existing conditions and there would be no impact to transportation on these roads.

Under Alternative A, all roads would continue to operate under existing conditions and there would be no impact to transportation. Under Alternative B, all roads with the exception of Windy Point and Telegraph Ridge Roads would continue to operate under existing conditions. Windy Point and Telegraph Ridge Roads would be closed under Alternative B. This would be a localized and long-term negative impact due to the loss of vehicle access and change in travel patterns. The impact is considered moderate due to the low volume of vehicle traffic using these routes. Under Alternative C, all roads with the exception of Etter Road, Saddle Mountain, and Mattole Estuary Roads would operate under existing conditions. Etter Road would be opened to 4-WD vehicles from April 1 through October 31, and Mattole Estuary Road would be opened. These changes would represent a minor, localized, long-term positive transportation impact by increasing access on these roads.

Alternative D proposes the most changes to roads. Under Alternative D, Smith-Etter and Etter Road would be open from April 1 to December 31 to all types of vehicles, Johnny Jack Road would be open April 1 to October 31 to 4-WD vehicles, Windy Point Road would be open to 4-WD vehicles, and Telegraph Ridge Road would be open from April 1 to December 31 and would be open to 2-WD vehicles to Spanish Ridge and to 4-WD vehicles the rest of the way. Paradise Ridge Road would be open for 1.5 miles to 2-WD vehicles and the rest of the way to 4-WD vehicles, Saddle Mountain Road would be open to all types of vehicles, and Mattole Estuary Road would be open. These changes would represent a moderate long-term positive impact to transportation by increasing access to areas to more types of vehicles and for longer periods of time.

4.11.13 Impacts to Transportation and Access from Recreation

All four alternatives would continue existing policies regarding visitor information, road and trail maintenance, Universal Accessibility Standards, and monitoring of visitor use so there would be no impact on transportation. All alternatives would provide barriers such as gates and fences, as needed, to block vehicular access to designated closed areas.

Alternatives B, C, and D would provide trailhead facilities, including parking which would create a moderate, localized, long-term impact. Alternative C and D would possibly create a new trailhead at Bear Creek, requiring reopening/hardening of the existing road. This road work would be a moderate, localized, and long-term impact. Alternative D would expand trailhead parking as needed. Expansion of parking facilities would involve construction and physical change, which would be considered a moderate, localized, long-term impact.

Alternative A would maintain existing facilities in the Residential Zone, including Mal Coombs Park and Black Sands Beach, and there would be no impact. Alternatives B, C, and D would possibly upgrade the parking lot at Mal Coombs Park to make more efficient use of space. Expansion of the parking lot

would involve construction and would be considered a moderate, localized, long-term impact. Alternative B would maintain the existing parking at Black Sands Beach. Alternatives C and D would add parking spaces at Black Sands Beach when opportunities arise. This expansion would involve construction and would be considered a moderate, localized, long-term impact.

4.11.14 Impacts to Transportation and Access from Interpretation and Education

All the alternatives would continue existing policies to provide information to visitors and there would be no impact on transportation.

4.11.15 Potential Cumulative Impacts to Transportation and Access

Population growth in southern Humboldt County over the life of this plan could result in minor to moderate traffic impacts, by adding pressure on the King Range transportation network, particularly in Alternatives A and D.

4.12 IMPACTS TO RECREATION

All four alternatives would continue policies regarding visitor information and adequate maps, road and trail maintenance, resource protection, visitor safety, special recreation permits, cooperative management, exclusionary fence and barrier construction, enforcement, Universal Accessibility Standards, and stressing compliance with coastal “leave no trace” principles. These policies would have a long-term minor beneficial impact on recreation.

Policies would remain in place to provide supplementary rules and regulations to protect resources, visitor safety, and the surrounding community. Examples of such rules could include campfire prohibitions during extreme fire conditions, requiring bear proof food containers in the backcountry, and requiring weed free livestock feed on equestrian trails. Rules such as these would have minor impacts on recreation because visitor behavior or equipment usage would only have to change slightly to comply with the new rules.

Policies regarding special recreation permits would have a negligible beneficial impact on recreation by maintaining consistent use within the management zones, and prohibiting incompatible use which could create conflicts with other recreational users in that zone.

Policies to control unauthorized visitation from public land onto private land and to restrict vehicle use within designated areas would have a long-term minor beneficial impact on recreation. Enforcing existing regulations and applying other regulations for visitor safety or resource protection would have a long-term moderate beneficial impact, because the regulations would help to reduce visitor safety incidents, conflicts with other users, and would ensure additional protection of sensitive resource areas.

Policies ensuring that Universal Accessibility Standards under the Americans with Disabilities Act are met would have a long-term moderate beneficial impact on recreation. Visitors with disabilities would have an improved recreational experience at KRNCA, because of improved access to recreational areas, trails, campgrounds and other facilities.

Use allocation measures would have a long-term beneficial impact on the quality of the recreation experience by reducing noticeable resource impacts and user encounters. However, implementation of such a system would displace users geographically and temporally.

4.12.1 Impacts to Recreation from Visual Resources Management

Policies common to all alternatives which would complete visual contrast ratings, inventory existing and proposed scenic vista points, and ensure non-detracting coastal development, would have a positive impact on recreation by ensuring that the scenic quality of the King Range is maintained—a primary feature that attracts visitors to the area.

Under Alternative A, VRM classes would continue as currently managed and would have no impact on recreation. Alternative B would manage the Backcountry Zone as VRM Class I which may require some facilities or structures including fences, and dilapidated buildings to be removed in order to maintain the Class I rating. This would result in a minor positive impact to recreation by removing unnatural features. Visitors and local residents who recreate in the Backcountry Zone because of its primitive qualities, relative solitude, and natural scenic character, would continue this experience resulting in a moderate beneficial and long-term impact on recreation. Maintaining the Frontcountry Zone as VRM Class III and the Residential Zone as VRM Class IV would result in no impacts on recreation under Alternative B. Alternative C would have the same VRM classes as Alternative B and therefore would also have a minor positive impact on recreation in the Backcountry Zone and no impact to recreation in the Frontcountry and Residential Zones. Minor impacts on recreation under Alternatives B and C would be short-term in effect. The difference between Alternatives C and B would be that a portion of the Backcountry Zone north of Cooskie Creek would be managed as VRM Class II under Alternative C. This would result in no impact on recreation in this area of the Backcountry Zone. As in Alternatives B and C, Alternative D would manage the Frontcountry and Residential Zones as VRM Classes III and IV respectively, which would result in no impact on recreation in either of these zones. However, as opposed to Alternatives B and C, Alternative D would manage the Backcountry Zone as VRM Class II, resulting in no impact on recreation in the Backcountry Zone.

4.12.2 Impacts to Recreation from Cultural Resources Management

Under all alternatives, existing policies involving issuance of permits, field evaluations, and use allocations, safeguards against incompatible uses, and archaeological inventories will have no impact on recreation. Policies encouraging appropriate educational and interpretive outreach will have a long-term minor beneficial impact on recreation by providing additional cultural information and opportunities that would enhance visitors' recreational experiences at the KRNCA.

Alternatives A and B would continue existing policies that protect cultural and historic resources, so there would be no impacts on recreation. However, priorities for protection would be placed on resources within the Backcountry and Residential Zones, where particularly relevant prehistoric and historic sites are located. Under Alternative C, all three management zones (Backcountry, Frontcountry, and Residential) would have priority for protection, which would result in minor to moderate beneficial impacts on recreation, due to visitors and local users who are interested in viewing and learning about historic resources and their preservation. These impacts would be long-term.

Alternative C would also incorporate policies to increase resource monitoring, site patrols and collaboration with Native American tribes and individuals. Implementation of these policies would not impact recreation. Alternative D is similar to Alternative C, but provides for additional actions encouraging further surveying of the Frontcountry Zone, regional overviews, stabilization of historic properties, and development of National Register nominations for historic and prehistoric districts. These policies and actions under Alternative C and D would result in long-term moderate and beneficial impacts on recreation, because of the positive interest expressed by visitors and local users who visit KRCNA towards the preservation of cultural and historic resources, opportunities for volunteer outreach, and the opportunities for education and interpretation of these resources.

4.12.3 Impacts to Recreation from Lands and Realty

Policies to acquire lands and interests determined to be desirable for consolidation to facilitate management in the Backcountry and Frontcountry Zones (Alternatives B, C, and D), and in the Residential Zone and adjacent or outside the boundary lands (Alternatives C and D), could impact recreation depending upon whether the acquisitions facilitate public access, provide opportunities to open new recreation areas, and/or provide new linkages to adjacent recreation areas. Impacts would vary by acquisition type and could range from negligible to moderate depending on the location of the acquisition and how much it modifies current recreation experiences. Impacts would be considered beneficial and long-term with respect to providing additional land for recreational use.

Policies to consider new rights-of-way and/or permits for roads/utilities in the Frontcountry and Residential Zones under Alternatives B, C, and D could impact recreation positively (for those visitors wanting roaded opportunities) if access is improved by the new roads. However, since the majority of the recreation areas in the Frontcountry and Residential Zones are currently accessible by road, additional road rights-of-way would have only long-term negligible negative impacts. The level of impact would depend on each individual case and location relative to the KRNCA; however, it is possible that additional road rights-of-way would open some areas to increased vehicle access where none exists currently, potentially increasing the level of visitation and corresponding negative impacts to recreational areas.

Excluding the Backcountry Zone from consideration of new rights-of-way under Alternatives B and C would not impact recreation because new rights-of-way would not be required to meet the objectives and resource conditions of the management zones, Interim Guidelines for Wilderness Study Areas, and the Standards and Guidelines for the Northwest Forest Plan. As a result, new rights-of-way would not affect recreational opportunities or experiences within the KRNCA.

Under Alternative D, consideration of applications for rights-of-way and permits would be similar to Alternatives B and C, in that they would have to meet the same requirements for resource conditions, management zones, standards, and guidelines, resulting in no impact on recreation. Utilities rights-of-way under Alternatives B and C would result in no impact on recreation, as rights-of-way would be restricted to existing and/or underground locations to maintain aesthetic values. Alternative D actions are slightly different compared to Alternatives B and C, in that all applications for rights-of-way (roads, utility corridors, water facilities, and communication sites) would be considered on a case-by-case basis for any management zone, and therefore less restrictive than Alternatives B and C in the Backcountry

Zone. This has the potential for negative impacts on recreation. These impacts are expected to be moderate based on anticipated demand for rights-of-way.

4.12.4 Impacts of Recreation from Inventory Units and Study Areas

Recreation impacts associated with inventory units and study areas would be related to potential changes in access and allowable uses, existing and proposed trail routes, and location of existing or proposed facilities.

4.12.4.1 Wild and Scenic Rivers

Under Alternative A, there would be no change in the quantity of river segments proposed for designation under the National Wild and Scenic Rivers System (NWSRS); therefore, there would be no impact on recreation under this alternative. Under Alternatives B, C, and D, there would be additional river (eligible) segments recommended as suitable for inclusion in the NWSRS, with all 28 river segments being recommended under Alternative B; fifteen river segments recommended under Alternative C; and seven river segments recommended as suitable under Alternative D.

Under all alternatives, the BLM would place all suitable river segments under protective management until a final decision is made by Congress. Under these alternatives, there would be minimal impacts to recreation as few actions are planned along rivers that would impact designation. The only exception is a proposed group camping area at the Mattole River Estuary, which could be impacted by Wild and Scenic River designation.

Under Alternatives B, C, and D, the mouth of the Mattole River and estuary would receive preliminary classification as a scenic river area, as well as Mill Creek and South Fork Bear Creek, north of Shelter Cove Road. The remaining portion of South Fork Bear Creek, south of Shelter Cove Road, would be preliminarily classified as a recreational river area.

4.12.4.2 Wilderness Study Areas and Wilderness Characteristic Inventory Units

Under all alternatives, lands currently designated as WSAs would be managed under the BLM's "Interim Management Policy (IMP) for Lands under Wilderness Review" (H-8550-1), until Congressional designation as Wilderness or release from WSA status. Under all alternatives, there would be no impact on recreation within the Backcountry Zone, which is most affected by WSA status. This is because the alternatives propose minimal to no new recreational facilities or development within the Backcountry Zone.

Wilderness characteristics would be protected on land adjacent to the existing King Range and Chemise Mountain WSAs as identified by alternative; 10,259 acres under Alternative B; 6,612 acres under Alternative C; and 200 acres under Alternative D. All parcels would be managed to protect their wilderness characteristics and incorporated into the Backcountry Management Zone. Protective management of additional lands outside of the existing WSAs under Alternatives B and C would preclude development of mountain bike trails in these locations. Although the plan does not specifically call for development of mountain bike trails in these locations, a management goal is to explore opportunities to develop more trails for this sport outside of the WSAs. This restriction on trail development would

result in a minor impact to mountain biking, as other portions of the Frontcountry Zone would remain open for trail consideration.

4.12.4.3 ACECs

Alternatives A and B would continue current management of the 655 Acre Mattole Estuary ACEC, protecting significant archaeological sites, fragile sand dune ecosystem, and riparian areas/wildlife values and coastal strand south to Sea Lion Gulch. There would be no additional ACEC designations under Alternatives A and B; therefore, there would be no impact on recreation from ACECs.

Alternatives C and D would be similar to actions under Alternatives A and B, except an additional ACEC designation would be proposed for Mill Creek Watershed (approximately 680 acres) including all BLM managed lands within the watershed in order to protect water quality important to anadromous fish stream/cold water tributary; and the low-elevation old-growth Douglas fir forest. There would be minor impacts on recreation as ACEC designation would not preclude any planned recreational development and primitive recreation would still be allowed. Some restrictions to visitor use such as a ban on campfires may cause minor impacts to recreation if implemented to protect ACEC values.

4.12.5 Impacts to Recreation from Aquatic and Fisheries Management

Under all alternatives, existing policies would remain in place to restore and maintain the ecological health of watersheds and aquatic habitats on public lands, so there would be no impact on recreation. The proposed standards and guidelines included in Alternatives B, C, and D would not create impacts on recreation.

Implementing projects pertaining to in-stream habitat enhancement, riparian silviculture and monitoring measures as outlined under Alternatives A, C, and D would not impact recreation. Not implementing these actions under Alternative B would also not impact recreation. However, recreation could be affected by road decommissioning, which is potentially related to several of the up-slope sediment reduction projects included under all four alternatives. However, roads selected for decommissioning are not open to vehicle travel so impacts are negligible. For other recreational users, decommissioning of some roads for habitat enhancement provides opportunities for experiencing a healthier and naturally functioning ecosystem, which would enhance their own recreational experience. In this regard, impacts on recreation from habitat enhancement could also be minor, beneficial, and long-term.

Implementing the estuary enhancement program in Alternatives A, C, and D would result in long-term, negligible beneficial impacts on recreation, related to the value placed on visitors being able to view enhanced estuarine ecosystems. Not implementing the estuary enhancement program in Alternative B would result in no impacts on recreation.

4.12.6 Impacts to Recreation from Wildlife Management

Under all alternatives, policies would remain in place to maintain and enhance natural wildlife populations. In addition, existing policies would remain in place to minimize or eliminate the need for listing of additional species under the ESA, and to contribute to the recovery of listed species. Because these alternatives would continue existing policies, there would no impact on recreation. Actions specific

to bald eagles, snowy plovers, marbled murrelets, spotted owls, and Steller's sea lions (Alternatives C and D only) would not impact recreation. Additional policies on facilitating research and monitoring of wildlife (Alternatives C and D only), special-status amphibians and reptiles, game species, would not impact recreation. Support of wildlife reintroductions could benefit recreation by providing additional viewing opportunities. Intertidal habitat policies to educate visitors in Alternatives C and D would have long-term minor beneficial impacts on the recreational experience from learning new information and helping to reduce visitor impacts on intertidal species. Other intertidal habitat policies would not impact recreation under any of the four alternatives.

4.12.7 Impacts to Recreation from Terrestrial Ecosystems and Vegetation Management

Alternative A would continue current management conditions, and would carry forward general vegetation guidelines which would not impact recreation. Alternatives B, C, and D have specific management actions for different habitat types. Policies to maintain coastal dunes under Alternatives B and C would not impact recreation. Under Alternative D, recreation use may be restricted to meet coastal dune habitat objectives, which could potentially impact recreation. Depending upon how recreational use was altered, a trail relocation could have a negligible adverse impact, whereas closure of a recreation area could have a minor to moderate localized impact depending on the location and visitor use level of the area.

Prescribed burning policies for coastal scrub (Alternatives C and D), grassland (Alternatives B, C, and D), and chaparral (Alternatives B, C, and D) may have very localized short-term impacts on recreation if recreational use was temporarily suspended in areas where burns were taking place, or access to other recreation areas was prohibited due to prescribed burning. Visually, the burned area could have a short-term minor adverse impact on the recreational experience if it is very close to a trail or campground. If prescribed burns are done so they are sensitive to location, timing and frequency, impacts on recreation would be short-term and minor to moderate. Additionally, there could be negligible to minor beneficial impacts following a prescribed burn, depending on location, due to the effects of revitalized vegetation and the appearance of wildflowers within the burned area. These impacts could be long or short-term.

Limited grazing for coastal scrub and grassland management in Alternatives C and D could have minor localized negative impacts on recreation depending on where it took place. If grazing were to take place in the Backcountry Zone near a trail or campground, the impact to recreation would be short-term and minor adverse due to the sight and smell of domestic animals in a wilderness environment, and having to avoid cow feces. There would be no impacts to recreation if grazing were done so that it was not detectable to recreational users on trails and in campsites.

Using mechanical means to maintain coastal scrub in Alternative D and manual removal of trees to maintain grassland habitat in Alternative B may result in impacts to recreation depending on the timing and location of projects. If the projects are close to recreation areas, especially during periods of high visitor use, the noise and visibility of the projects would result in short-term minor adverse impacts. If projects were done to avoid popular recreation areas and high use times of the year, impacts would be localized and negligible.

Other policies for habitat management of coastal scrub, grasslands, and chaparral under Alternatives B, C, and D would not impact recreation. Policies regarding efforts to map, monitor and eradicate invasive plant species in all four alternatives would not impact recreation. Additionally, all policies regarding sudden oak death across all four alternatives would not impact recreation.

4.12.8 Impacts to Recreation from Forest Management

Under all alternatives, policies to maintain forest stand characteristics and late-successional/old growth forest habitat would not affect existing recreational facilities or trails, so there would be no impact on recreation. Silvicultural treatments under Alternatives A and B would not impact recreation. Under Alternative C, and especially under Alternative D, policies on salvaging timber in the Frontcountry and Residential Zones could impact the recreation experience if access were affected or closed, recreational use temporarily suspended in some areas, or if operations were visually distracting or disturbing to the traditional landscape scene. Long-term moderate to major adverse impacts would occur if timber salvaging operations were carried out close to popular recreation areas during peak use periods. Short-term negligible impacts would occur if access roads were temporarily closed or restricted, and no impact would occur if timber salvaging was carried out away from recreation areas, and the salvaging operations were not visible to recreational users. Management goals of promoting a natural mosaic of forest vegetation with a large component of old-growth forest would be a major beneficial impact, as the large forests of Northwest California are a major visitor attraction.

As for specific areas requiring treatments, thinning or pile burning in Noonung Creek and Finley Ridge, Bear Trap Creek, and Kaluna Cliff could potentially cause impacts to recreation. If these projects are carried out near recreation areas such as trails or campgrounds, long-term moderate to major adverse impacts could occur.

4.12.9 Impacts to Recreation from Special Forest Products Management

Issuance of permits to collect mushrooms, beargrass, floral trade species, and fuelwood under all the alternatives would not impact recreation. Policies regarding beargrass in Alternatives A and B would not impact recreation. Most policies regarding beargrass in Alternatives C and D would not impact recreation, except the policy to coordinate with local tribes to increase awareness and education regarding cultural use of beargrass and implementation of active management efforts. Increased awareness and education could have a long-term negligible beneficial impact on the visitor experience at KRNCA. Implementation of active management efforts, such as prescribed burns in a designated “Native American Beargrass Collection Unit” as proposed in Alternatives C and D, could have a localized minor to moderate short-term adverse impact on recreation. This could occur if the prescribed burns were carried out in close proximity to trails or campground areas, resulting in temporary closure of the recreation area.

4.12.10 Impacts to Recreation from Grazing Management

Under Alternatives A, C, and D, existing policies would remain in place to preclude loss or reductions in grazing allotments or AUMs, resulting in no impact on recreation. Under Alternative B, all livestock grazing would be eliminated from the King Range, which could result in long-term minor to moderate

beneficial impacts on recreation for those recreational users who prefer not to share trail and campground areas with grazing livestock.

4.12.11 Impacts to Recreation from Fire Management

Under all of the alternatives, policies regarding campfire permits would remain the same and therefore would not impact recreation. Wildfire prevention and education programs would have a long-term negligible beneficial impact on visitor experience by increasing the awareness and knowledge of visitors and local recreational users. Policies regarding utilization of prescribed fire and mechanical fuel reduction methods to manage fuels for low intensity wildfires, and to reduce fire spread within the Frontcountry and Residential Zones, and completing and maintaining planned fuel break systems would not impact recreation. Under all four alternatives, prescribed burning activities could impact recreational use based on their location, timing, and frequency. As with prescribed burning to maintain habitat, burning may have very localized short-term minor adverse impacts on recreation if recreational use was temporarily suspended in areas where burns were taking place, effects of smoke and reduced visibility were present in adjacent areas, or if access were restricted/prohibited due to burning (see Section 4.12.7, Impacts from Terrestrial Ecosystems and Vegetative Management).

Visually, the prescribed burn areas could have an impact on the recreational experience if it is very close to a trail or campground. Broadcast burning (Alternatives A, C, and D) would have these impacts more than pile burning would since pile burning is typically localized. If prescribed burns are carried out frequently and close to high use trails, campgrounds, or access roads, impacts could be long-term and moderate adverse. If done so they are planned and announced in advance to the public, and are sensitive to location, timing and frequency, potential impacts on recreation would be long-term negligible and adverse.

Mechanized fuel reduction may result in impacts to recreation depending on the timing and location of projects. If the projects are close to recreation areas, especially during periods of high use, the noise and visibility of the projects could result in short-term minor adverse impacts. If projects were carried out to avoid popular recreation areas and peak use times of the year, impacts would be short-term and negligible.

In Alternatives B and C, naturally occurring fires in the Backcountry Zone would be allowed to burn. This policy may impact recreation due to temporary trail, campground, access closure, damage to recreational facilities, and alteration of the visual landscape setting. If a fire is allowed to burn along a trail or around a recreation area, the visual setting could potentially be altered as well as recreational facilities damaged. Depending upon the extent of the fire, the burned area could negatively affect the recreational experience of visitors and local users at KRNCA. The level of impact could range from no impact to major adverse. Management activities that reduce the likelihood of a catastrophic fire decrease the likelihood that impacts from fires will be severe.

4.12.12 Impacts to Recreation from Transportation and Access

All alternatives would continue existing policies to provide a network of roads that complement the rural character of the King Range. Under all alternatives, Prosper Ridge, Nooning Creek, and King Range Roads would have a limited designation and would be open year-round to all vehicle types. Finley Ridge

Road would be open year round to 4-WD vehicles. This would be a continuation of existing conditions and there would be no impact on recreation.

Under Alternative A, all roads would continue to operate under existing conditions resulting in no impact on recreation. Under Alternative B, all roads with the exception of Windy Point and Telegraph Ridge Roads would continue to operate under existing conditions. Windy Point and Telegraph Ridge Roads would be closed under Alternative B, resulting in a long-term moderate adverse impact on some recreation users due to the loss of access and change in travel patterns to recreation areas at Mattole Beach and overlook areas. Other visitors would view these closures as beneficial impacts by increasing the non-motorized use zones. Under Alternative C, all roads with the exception of Etter Road, Saddle Mountain, and Mattole Estuary Roads would operate under existing conditions. Etter Road would be opened to 4-WD vehicles, Saddle Mountain Road would be improved to allow 2-WD access along 1.4 miles of roadway, and Mattole Estuary Road would be opened. These changes would have a negligible beneficial impact on recreation, except to 4-wheel-drive users who may view the road upgrades as negative.

Alternative D proposes the most changes to roads. Under Alternative D, Smith-Etter and Etter Road would be open to all types of vehicles, Johnny Jack Road would be open to 4-WD vehicles, Windy Point Road would be open to 4-WD vehicles, and Telegraph Ridge Road would be open to 2-WD vehicles to Spanish Ridge and to 4-WD vehicles the rest of the way. Paradise Ridge Road would be open for 1.5 miles to 2-WD vehicles and the rest of the way to 4-WD vehicles, Saddle Mountain Road would be open to all types of vehicles, and Mattole Estuary Road would be open. These road changes would have a minor beneficial impact on recreation, as visitors interested in scenic touring by car will have greater access. OHV users would view the road improvements as negative impacts by reducing 4-wheel drive opportunities.

4.12.13 Impacts to Recreation from Recreation Management

All four alternatives would continue policies regarding visitor information and adequate maps, road and trail maintenance, resource protection, visitor safety, special recreation permits, cooperative management, exclusionary fence and barrier construction, enforcement, Universal Accessibility Standards, and stressing compliance with coastal “leave no trace” principles. These policies would have a long-term moderate beneficial impact on recreation. By providing improved visitor information and maps, visitors would leave recreational areas and trails in better condition and fewer visitors would get lost in the rugged terrain. Adequate and timely maintenance of roads, facilities, trails and signs would also have a long-term moderate beneficial impact on recreation by providing opportunities for visitors to easily obtain directional information and avoid access constraints which could detract from the visitor overall experience.

Under all of the alternatives, policies would remain in place to provide supplementary rules and regulations to protect resources, visitor safety, and the surrounding community. Examples of such rules could include campfire prohibitions during extreme fire conditions, requiring bear proof food containers in the Backcountry, and requiring weed free livestock feed on equestrian trails. Rules such as these would have minor impacts on recreation because visitor behavior or equipment usage would only have to change slightly to comply with the new rules.

Policies regarding special recreation permits would have a negligible beneficial impact on recreation by maintaining consistent use within the management zones, and prohibiting incompatible use which could create conflicts with other recreational users in that zone.

Encouraging and promoting cooperative management effort policies would result in no impacts on recreation.

Policies to control unauthorized visitation from public land onto private land and to restrict vehicle use within designated areas would have a long-term minor beneficial impact on recreation. These policies would maintain recreational use within the appropriate BLM boundaries, and reduce boundary conflicts due to unauthorized recreational use as well as to reduce conflicts between unauthorized vehicle use and other allowable uses.

Enforcing existing regulations and applying other regulations for visitor safety or resource protection would have a long-term moderate beneficial impact, because the regulations would help to reduce visitor safety incidents, conflicts with other users, and would ensure additional protection of sensitive resource areas. These benefits would allow visitors to have an improved recreational experience.

Policies ensuring that Universal Accessibility Standards under the Americans with Disabilities Act are met would have a long-term moderate beneficial impact on recreation. Visitors with disabilities would have an improved recreational experience at KRNCA, because of improved access to recreational areas, trails, campgrounds and other facilities.

Any visitor use allocation system would redistribute and modify visitor use patterns. These measures would result in a long-term beneficial impact by increasing the quality of the recreational experience for those visitors. Encounters with other visitors, competition for prime camping locations, and noticeable resource impacts would be diminished. However, some visitors would be displaced by applying use allocation measures, both geographically and temporally.

4.12.13.1 Methodology for Impact Assessment

In determining impacts on recreation, the following visitor use allocation assumptions were prepared to support each alternative theme and objective for management, along with a corresponding projection for baseline and proposed visitor use growth. Projected recreation visitor days were estimated as follows:

- Determination, by survey data, of popular recreational activities (e.g. backpacking, hiking, and camping)
- Determination of use projections for these activities, based on visitor trends
- Adjust the percentage of increase for a weighted average population increase based on top ten counties that contribute to KRNCA visitation
- Adjust what activities are contributing to growth based on assumptions for each alternative
- Adjust based on the “uniqueness” of the KRNCA as a backcountry coastal recreation destination with few substitute areas available

Assumptions by Alternative

Alternative A – No Action; Continue Current Management

- No use allocation system – so no limits on the numbers of visitors
- Developed campgrounds will hit carrying capacity around 2020 because no new campgrounds will be built and therefore camping no longer contributes to increased growth
- Continued opportunities for growth of day-use visitors to Shelter Cove and other sites
- Continued opportunities for growth in upland trail use, as these routes are just getting discovered by the public

**Table 4-3: Recreation Projections—
Alternative A**

YEAR	% GROWTH	RANGE OF VISITOR DAYS
2002	Base	144,816
2005	3.77%	150,279 – 165,307
2010	4.83%	157,542 – 181,173
2015	3.63%	163,254 – 195,905
2020	1.99%	166,495 – 208,119
2025	2.06%	169,925 – 220,903

Alternative B – Low Resource Intervention and Limited Recreational Use

- Use allocation system starts in 2008 and reduces visitation levels to what they were in 1997 in order to have high opportunity for solitude
- Backpacking numbers will be limited in order to maintain high opportunities for solitude, so backpacking no longer contributes to growth starting in 2008
- Developed campgrounds hit carrying capacity in 2015 because of use restrictions and no new development (two campgrounds are eventually eliminated) so camping no longer contributes to increased growth

**Table 4-4: Recreation Projections—
Alternative B**

YEAR	% GROWTH	RANGE OF VISITOR DAYS
2002	Base	144,816
2005	3.77%	150,279 – 165,307
2008	2.32%	153,765 – 173,754
	-11.59%	135,940 – 153,612
2010	1.54%	138,034 – 158,739
2015	1.15%	139,615 – 167,538
2020	1.32%	141,463 – 176,829
2025	1.46%	143,523 – 186,580

Alternative C – Moderate Resource Intervention and Moderate Recreational Use

- Use allocation system starts in 2010 when backpacking numbers will be restricted to maintain moderate opportunities for solitude so backpacking no longer contributes to growth
- Developed campgrounds hit carrying capacity in 2020 – no new campgrounds are built, so primitive camping no longer contributes to increased growth

**Table 4-5: Recreation Projections—
Alternative C**

YEAR	% GROWTH	RANGE OF VISITOR DAYS
2002	Base	144,816
2005	3.77%	150,279 – 165,307
2010	2.30%	153,731 – 176,791
2015	3.05%	158,424 – 190,109
2020	1.32%	160,521 – 200,651
2025	1.46%	162,858 – 211,715

Alternative D – Active Resource Intervention and Higher Recreational Use

- Use allocation system starts in 2010 but its high use and low opportunities for solitude will allow growth across all activities
- New development will be done on a needs basis and therefore developed campgrounds will not hit carrying capacity

**Table 4-6: Recreation Projections—
Alternative D**

YEAR	% GROWTH	RANGE OF VISITOR DAYS
2002	Base	144,816
2005	3.77%	150,279 – 165,307
2010	4.83%	157,539 – 181,170
2015	3.63%	163,253 – 195,904
2020	4.19%	170,096 – 212,620
2025	4.61%	177,938 – 231,319

4.12.13.2 Backcountry Zone

Under all alternatives, policies and actions on specific topics are proposed under the alternatives regarding recreational uses in the Backcountry Zone. Topics include visitor use management, special use management, facility development, trails, signage and interpretation, and resources monitoring.

Visitor Use Management

Alternative A would continue current management practices with no permit requirement or use allocation limits on visitation. This would have a long-term major adverse impact on recreation, because uncontrolled numbers of visitors entering the Backcountry would degrade the future visitor experience of finding opportunities for solitude and getting away from the sights and sounds of human development and activity. Unlike Alternative A, Alternatives B, C, and D would implement a visitor use allocation system.

Under Alternative B, a visitor use allocation system would be implemented within three years, designed to restrict visitor use numbers and provide high opportunities for solitude. Alternatives C and D would both increase the visitor use allocation system to allow moderate use numbers (Alternative C), and higher use numbers (Alternative D) within the Backcountry Zone. Both systems would be implemented within five years. Alternative B would restrict use the most in order to provide higher opportunities for solitude. This would decrease the number of visitors to the Backcountry Zone, but would offer a very high quality backcountry experience. This would result in a long-term major beneficial impact on recreation in the Backcountry Zone for those visitors that receive permits, while restricting freedom of access for other visitors until they receive permits for backcountry travel.

Alternative C would restrict visitor use to a level to provide for moderate opportunities for solitude. There would be more opportunity for visitors to experience solitude under this alternative than under Alternatives A and D, but less than Alternative B. Under Alternative C, visitor experiences in the Backcountry would not have the same level of quality as they would under Alternative B, but would allow for higher visitor use levels. Opportunities for solitude would be of higher quality than under Alternatives A and D. As a result, although there would be some loss in the quality of the backcountry experience, impacts on recreation would be long-term moderate and beneficial.

Under Alternative D, visitor use levels would be implemented to allow for high use numbers and only minimal opportunities for solitude. As with Alternative A, this alternative would present the potential to impact the Backcountry experience the most, because although there would be few restrictions on visitor use, there would be little opportunity for solitude and getting away from the sights and sounds of human development and activity. This would result in a long-term major adverse impact on recreation in the Backcountry Zone. Before the visitor use allocation system is implemented in any of the proposed alternatives, a self-registration system would be implemented that would result in a short-term negligible beneficial impact on recreation, by helping to better count recreational users and to aid in disseminating information to the public who would be recreating in KRNCA.

Under Alternative A, maximum group size for organized/commercial groups of 15 “heartbeats” (people and livestock), and a maximum number of 25 people departing from any given trailhead in one day, would continue as currently managed. Under Alternatives B, C, and D, group size would increase to 15 “heartbeats” on all trails (although there are only ten people allowed on all trails in Alternative B). The number of people that can leave from a trailhead in one day increases from 25 in Alternative A (current management), to 30 in Alternative C (two groups of 15) and 45 in Alternative D (three groups of 15). Increasing these numbers over what is proposed under Alternative B would have a long-term minor adverse impact on recreation for Alternative C, and a long-term moderate adverse impact for Alternative

D due to the increased numbers of visitors allowed on the trails in one day, resulting in less opportunity for solitude.

In Alternatives C and D, specific group camping locations would be promoted within the Backcountry Zone. This would direct group camping opportunities in the Backcountry resulting in a long-term moderate beneficial impact on recreation. Group avoidance areas would also be proposed under Alternative C that would be managed for lower visitor levels and limited to specific areas, but would retain other areas at high opportunities for solitude, reducing conflicts between larger groups and people looking for solitude and quiet.

In regard to commercial groups (businesses who charge fees for organized activities), Alternatives A, B and C would not allow commercial group usage on Memorial Day or July 4th weekends, which would limit opportunities for commercial groups, but enhance the recreational experiences of the general public. Under Alternative D, there would be no restrictions on commercial groups, resulting in a long-term minor to moderate adverse impact on recreation; depending upon the size of the commercial groups and frequency by which they access the recreation areas (a group is defined as having two or more persons recreating as part of an established organization).

Although there would be increased recreational opportunities for this segment of the visitor population, there would potentially be more congestion and crowding in campsites and on trails during these two popular holiday weekends, resulting in less opportunity for solitude for other users.

Alternatives C and D would propose charging a nominal fee for overnight use, for reinvestment in management of resources and visitor services. Although some people may not be able to afford to recreate overnight if fees were required, the benefit from reinvesting this money to maintain the visitor experience in the KRNCA would result in this policy having a long-term moderate beneficial impact on recreation.

Under Alternative A, current management practices would remain in place, resulting in long-term minor adverse impacts on recreation from continuing conflicts between hunters, visitors, and adjacent landowners. Alternatives B, C, and D would all propose moving the hunting season to after Labor Day, which would result in long-term minor beneficial impacts on recreation by removing conflicts and safety concerns, as many of the conflicts between hunters, recreational users, and adjacent landowners occur during the holiday weekend. This would have a moderate, adverse impact on hunting enthusiasts who enjoy the start of the hunting season at KRCNA in the late summer months instead of the fall. It would also shorten the hunting season, since the dates could not be extended later due to biological (deer rutting season) considerations.

Concerning Special Use Management, Alternatives B, C, and D address proposed actions for mountain biking within the KRNCA. Under Alternative A, mountain biking is permitted on all roads and trails within the planning area except for Horse Mountain and Chinquapin. Current use is fairly limited due to the rough terrain within KRNCA, and would not be impacted under alternative A. Alternative B would prohibit mountain biking in anticipation of possible wilderness designation. This would have a long-term beneficial impact on recreation users who are impacted by mountain bikes on trails. However, this impact will be negligible due to the low use of mountain bikes within KRNCA. For mountain bikers, this would represent an adverse impact. Alternatives C and D would permit mountain bikes on existing trails,

but not on any new trails within the Wilderness Study Areas (WSAs). Comparatively, this would result in less of an adverse impact on biking enthusiasts.

Watercraft landings in remote areas have become more common in recent years. Alternatives B and C would propose to prohibit motorized watercraft landings except for emergencies, which reinforces access to remote beach recreation areas by land only. This policy would have a long-term moderate beneficial impact on recreation due to removing opportunities for watercraft to randomly access remote beach areas, thus improving the Backcountry natural scene and visitor experience. Although using watercraft helps some people access recreation opportunities, motorized watercraft landings diminish the Backcountry experience by allowing motorized entry into a remote place that is managed to be a natural place away from the sights and sounds motorized equipment. Eliminating these landings would also help decrease trash left behind, thus improving the look and maintenance of the Backcountry. Alternative D would manage landings to minimize conflicts with other Backcountry users. This would result in a long-term moderate adverse impact on recreation within the Backcountry, because these landings would continue to detract from the Backcountry experience through their noise, trash, and invasion of a remote natural area.

Only Alternatives B and C would have policies regarding overhead flights. These policies would help improve the Backcountry experience by reducing the sight and sound of humans by discouraging low-flying aircraft, resulting in a long-term minor beneficial impact on recreation.

Facility Development

Each of the four alternatives would allow for a different level of facility development. Alternative A would maintain existing facilities at current levels, with no new facilities. Since visitation would continue to increase under Alternative A, existing recreational facilities would be affected and visitor use would exceed their designed carrying capacity. This would create overcrowding conditions that would eventually displace some recreational users to seek other locations for their recreational experience. This would result in a long-term moderate adverse impact on recreation. Alternative B would be similar to Alternative A, but would go further by removing existing shelters and fire rings on the coast to maintain a more natural setting. While this would provide for a more natural setting and experience for visitors who prefer to see a more natural “untouched” landscape, it would force some visitors to find other locations for use of shelters, and would require using a low impact approach for fire ring activities while on the beach. This would result in a long-term negligible adverse impact on recreation.

Alternative C would propose development of minimal facilities for visitor safety and resource protection, but not for visitor convenience. Facilities that could be added include Backcountry campsites, a bear proof food storage system, and Backcountry toilets, but only if alternative solutions have proved unsuccessful. Additional facilities would help with issues such as sanitation and could balance use among other sites, however, this could also change the look and feel of areas which did not have development previously. Impacts on recreation would be long-term minor adverse if only a few facilities were added, or long-term moderate adverse if more facilities were added. Alternative D also would develop minimal facilities for visitor safety and resource protection. Facilities include those in Alternative C along with a Backcountry ranger station along the coast. Again, facilities may help with management issues such as sanitation or wildlife encounters, but could also change the look and feel of areas by adding development to primitive areas. Impacts would depend on the extent of constructed facilities; resulting in long-term

minor adverse impacts if only a few facilities were added, and long-term moderate adverse impacts if more facilities were constructed.

In regard to fences and barriers, Alternative A would maintain existing fences and barriers for resource protection that would have no impact on recreation, since these elements are currently in place. Under Alternative B, the focus would be only to maintain low impact fences and barriers where absolutely necessary for resource protection. This would result in no impact on recreation. Alternative C would construct or maintain fences and barriers only if alternative means of protection have proved unsuccessful. This could result in long-term minor impacts on recreation due to the visual effect on primitive areas in the backcountry. Alternative D would construct or maintain fences and barriers where necessary to protect sensitive natural or cultural areas. Impacts would be the same as Alternative C.

Trails

All four alternatives would maintain existing trails. Under Alternative A, the current network of trails would be maintained, resulting in no impact on recreation. Alternative B would be the same as Alternative A, but would also provide gates and fences to block vehicular access with added horse passes, resulting in a long-term minor beneficial impact on recreation due to the elimination of unauthorized vehicle access and recreational use. Alternatives C and D would develop new trails as needed, including trails for a wider range of visitors, development of potable water sources near upland trails, and improving horse trails, and creating a horse camp at Miller Flat. Alternative C would develop an “easy-grade” interpretive trail at Hidden Valley; where as Alternative D would develop a wheelchair accessible trail at Hidden Valley. These policies would result in long-term moderate beneficial impacts on recreation due to new opportunities for recreation, an increase in the range of users that could access trails, and more increased visitor comfort on trails (water available, more horse facilities).

Signage and Interpretation

All alternatives would maintain the existing signs and interpretive information, as required, to provide for visitor safety and resource protection. Alternatives A and B would both maintain these actions, which would result in no impacts on recreation. Alternative C would also propose installation of way-finding signage at campsites, water sources or other important features, which would result in long-term moderate beneficial impacts, since these actions would enhance way-finding for visitors, prevent trespassing onto private land, or suffering health risks (such as drinking untreated water from developed water sources). However, unless properly designed to blend into the surrounding landscape, additional signage could also detract from a natural primitive experience present in the Backcountry Zone. Alternative D would be similar to Alternative C, except proposed actions would include interpretive signage, signboards, or mini-kiosks at major camping areas to highlight regulations, safety issues, and low impact camping techniques. Although these improvements would also help with visitor safety and responsibility, they could also detract from the natural setting and primitive experience that the Backcountry offers, unless sensitively designed. This would result in long-term minor beneficial impacts on recreation.

Monitoring

All of the alternatives would continue ongoing monitoring programs with some minor changes in Alternatives B, C, and D, which would have no impacts on recreation.

4.12.13.3 Frontcountry Zone

Under all alternatives, policies and actions on specific topics are proposed under the alternatives regarding recreational uses in the Frontcountry Zone.

Visitor Use Management

Under Alternative A, a maximum of eight people would be allowed per campsite at developed campgrounds, as currently managed. Group size at Nadelos group camp could range from 20 to 60 people. Under Alternatives B, C, and D, maximum use levels at recreational facilities would be determined on a site-by-site basis. Determining maximum use levels on a site-by-site basis over what is currently managed under Alternative A would have no impact on recreation for Alternatives B, C, and D.

Alternatives B, C, and D, propose incorporating the Lost Coast Trail segment from Mattole trailhead to the Punta Gorda lighthouse into the Backcountry visitor use allocation system. This could be used to restrict visitor use numbers along this highly used trail segment, providing for increased opportunities for quiet and solitude. This would result in long-term minor beneficial impacts on recreation.

Facility Development

Each of the four alternatives would provide and maintain existing facilities, including trailheads, parking, and information kiosks. Under Alternatives A and B, no new facilities would be proposed. Since visitation would continue to increase under Alternatives A and B, existing recreational facilities would be affected and visitor use would exceed their designed carrying capacity. This would create overcrowding conditions that would eventually displace some recreational users to seek other locations for their recreational experience. This would result in a long-term moderate adverse impact on recreation.

Alternative C would propose development of a new trailhead at Bear Creek, which would provide for additional hiking opportunities for visitors to the Frontcountry Zone. Impacts on recreation would be long-term minor beneficial. Alternative D would also propose development of a new trailhead at Bear Creek, but would also provide for expanded trailhead parking at existing trailheads as needed. These expansions would help to mitigate parking and overcrowding problems at popular trailheads, as would a new trailhead at Bear Creek to provide additional hiking opportunities for visitors. This would result in long-term minor beneficial impacts on recreation if only limited trailhead parking was expanded. If expansion increased beyond the existing trails' carrying capacity for hiking, it is possible that some long-term minor adverse impacts could occur due to the increased level of use.

In regard to campgrounds in the Frontcountry Zone, Alternative A would continue current management practices with no change to campground areas. Since visitation would continue to increase under Alternatives A, existing campground facilities would be affected and visitor use would exceed their designed carrying capacity. This would eventually displace some recreational users to seek other locations for their recreational experience, which is considered a long-term moderate adverse impact on recreation.

Under Alternative B, the focus would be to maintain campgrounds at Nadelos, Wailaki, Tolkan, and Mattole, and to provide potable water at all four of these sites if feasible. Existing facilities would be retrofitted where possible to meet Universal Accessibility Standards. Horse Mountain and Honeydew Campgrounds would be removed, with Honeydew being maintained as a day-use area only. Camping would also be prohibited within a quarter-mile of Mattole campground. This would result in a long-term negligible beneficial impact on recreation, since the quality of the camping experience would be improved at four of the existing campgrounds, but would also result in a long-term minor adverse impact for potential campers who will no longer be able to find a campsite due the removal of campground sites. Alternative C would be similar to Alternative B, except that all campgrounds in the Frontcountry Zone would be maintained and improved to the same conditions, and upgrades would be made to Horse Mountain and Mattole campgrounds. This would result in a long-term moderate beneficial impact on recreation.

Alternative D would meet all of the actions outlined in Alternative C, would propose to expand campground areas as needed to accommodate increasing visitor use, and would propose to develop a group/overflow campsite near the river. This would result in a long-term moderate beneficial impact on recreation, because all campgrounds would be improved to the same conditions, with some expansion to accommodate increasing visitor and group camping use. The impact intensities would be basically the same for Alternatives C and D for campgrounds, because while Alternative D would provide for some potential expansion, it would be limited to the constraints of the existing sites and resource conditions which may restrict expansion at some locations.

Trails

Under Alternative A, the current network of trails would be maintained, resulting in no impact on recreation. Alternative B would only establish and maintain a minimal network of trails, including expanding and improving the interpretive trail between Wailaki and Nadelos as a loop trail with wheelchair accessibility. Alternative B would also provide adequate barriers against illegal OHV use while providing for horse passes. This would result in a long-term minor beneficial impact on recreation since only a minimal network of trails would be maintained.

Alternatives C and D would be similar to actions proposed under Alternative B, except that they would also develop additional trails as needed, and would improve the linkage between the north and south segments of the Lost Coast Trail; reestablish the trail from Tolkan to Bear Creak. This would improve the hiking experience for a wider range of visitors and would help to balance the carrying capacity on some of the more popular trails, thus reducing impacts to other uses and resource areas. These policies would result in long-term moderate beneficial impacts on recreation due to new opportunities for recreation, and an increase in the range of users that could access trails.

Signage and Interpretation

Alternatives A, B, C, and D would maintain and install signs as needed for visitor safety, orientation, education, and resource protection. This would result in no impact on recreation.

Monitoring

Alternatives A, B, C, and D would continue ongoing monitoring of use levels and consider special uses on a site-by-site basis, which would have no impact on recreation.

4.12.13.4 Residential Zone

Under all alternatives, policies and actions on specific topics are proposed under the alternatives regarding recreational uses in the Residential Zone. Proposed actions and impacts for Alternatives C and D would be the same throughout the Residential Zone.

Visitor Use Management

Under Alternative A, group use events would be continued on a case-by-case limited basis, if such use does not result in resource damage or impacts to nearby residents. This would result in no impact on recreation. Under Alternative B, group events may be authorized at Mal Coombs Park on a case-by-case basis, which do not unduly impact local residents or other recreational users. Non-traditional and newly emerging recreational uses would be allowed as long as they are consistent with zone management objectives. This would result in no impact on recreation. For Alternatives C and D, specific areas and sites may be identified as special use areas to accommodate specific visitor needs, including development of a group use area in Mal Coombs Park. Non-traditional and newly emerging recreational uses would be the same as under Alternative B, and as a result, there would be no impact on recreation.

Facility Development

Alternative A would maintain existing recreational and interpretive facilities at Mal Coombs Park, including restroom, parking lot, picnic tables, the relocated Cape Mendocino lighthouse, monuments, interpretive panels, barriers, and steps down to the beach and tidepools; maintain existing Black Sands Beach parking, restroom, informational kiosks and other facilities, and ensure visitor safety along the cliff; maintain Seal Rock and Abalone Point areas for individual and small group day use, providing opportunities for picnicking, wildlife viewing, interpretation, and other compatible recreational and educational activities. With continued maintenance of these recreational areas under Alternative A, there would be no impact on recreation.

Under Alternative B, the restroom at Mal Coombs Park would be upgraded to meet provisions for persons with disabilities and to accommodate heavy seasonal use, with possible upgrade to the parking lot. Cooperative efforts would be proposed with local groups to maintain the Cape Mendocino lighthouse, memorials, and joint projects. Existing pedestrian access to the tidepools would be maintained as well as providing information and interpretation for tidepool ecology and diversity; The Black Sands Beach parking facility would be maintained, as well as improved landscaping and views from the overlook and visitor safety along the cliff. Alternative B would also disallow all camping within ¼ mile from the Black Sands Beach trailhead; Actions to maintain Seal Rock and Abalone Point would be the same as Alternative A. With upgrades and improvements to existing facilities and access, and restriction on camping too close to the trailhead, there would be an improvement to the visitor experience resulting in a long-term minor beneficial impact on recreation. Implementation of Alternative B would also displace some camping due to the ¼ mile restriction from the Black Sands Beach trailhead, resulting in long-term, minor adverse impacts on recreation due to these visitors having to locate

alternate camping opportunities within KRCNA or in adjacent areas. However, it would improve the recreational experience for day users and local residents wishing to enjoy the beach without a lot of people camping in the immediate vicinity.

Alternative C and D would propose a similar list of upgrades and improvements to facilities as outlined in Alternative B, would provide for development of a group use area, and would consider opportunities for additional vehicle parking and parking for horse trailers. Alternatives C and D would also require commercial groups to camp at least ¼ mile from Black Sands Beach trailhead, and individuals and non-commercial groups to camp north of Telegraph Creek. They would also allow group use events on a case-by case basis at Seal Rock and Abalone Point. These upgrades and expansions would help to mitigate parking and overcrowding problems at these popular day-use and overnight destinations, and would also further increase opportunities for improving the visitor experience within the Residential Zone without impacting local residents. This would result in long-term moderate beneficial impacts on recreation only if limited day-use parking was expanded. If expansion increased beyond the existing carrying capacity of these facilities, it is possible that some long-term minor adverse impacts could occur due to the increased level of use.

Trails

Under all alternatives, the wheelchair accessible trail in Mal Coombs Park would be maintained to provide access between facilities, along with maintaining a safe and adequate beach access trail at Black Sands Beach trailhead. This would result in no impact on recreation.

Signage and Interpretation

Under Alternative A, existing signs and interpretive information will be maintained to provide for visitor orientation, safety, education, and to promote resource protection resulting in no impact on recreation. Alternatives B, C, and D would install and maintain adequate signs and interpretive information, to provide for visitor orientation, safety, education, and to promote resource protection. This would result in a long-term negligible beneficial impact on recreation, because improved signage would assist visitors and local users with better information with which to plan their activities at the KRNCA.

Monitoring

All alternatives would continue monitoring of use levels, vehicle parking, and lighthouse visitation, which would have no impact on recreation.

4.12.14 Impacts of Recreation from Interpretation and Education

Policies under all of the alternatives to provide information through a variety of formats and venues would have a long-term major beneficial impact on recreation. By providing visitors with enhanced interpretive background and up-to-date site information, visitors would be better able to plan their recreational trip to the KRNCA. Visitors would also be better prepared for the weather and the remote rugged nature of the area, thus allowing them to have a better recreational experience.

Under all four alternatives, policies to provide improved safety and orientation information to visitors before they enter the Backcountry would have a moderate beneficial impact on recreation. If visitors were provided improved trip planning information, there would potentially be fewer problems and accidents, resulting in a much improved visitor experience.

Policies to provide support for BLM King Range programs utilizing a variety of outreach approaches would have a long-term minor beneficial impact on recreation under all alternatives, due to enhancement of the recreation experience and exposure to the significant resources of the KRCNA. More interpretation projects that increase the information and opportunities available to visitors would help them become more knowledgeable about the KRNCA, and would enhance the recreation experience.

Under all of the alternatives, policies to engage children in learning about the King Range by developing curriculum based education opportunities would have a long-term moderate beneficial impact on recreation. These policies would offer children new information and opportunities to experience King Range, thus improving their visitor experience, and perhaps secondarily enhancing their family's own visitor experience to the KRNCA.

4.12.15 Potential Cumulative Impacts to Recreation

This RMP complements the Sinkyone Wilderness plan, currently in progress, by linking the two areas to form a unique coastal experience. It also contributes to a range and "critical mass" of recreation opportunities in the Humboldt County region, creating a beneficial cumulative impact for recreational visitors who travel to the area as a destination.

4.13 IMPACTS TO AIR QUALITY

Only a few management programs will have impacts on air quality; all others not described can be assumed to have negligible or nonexistent impacts.

4.13.1 Impacts to Air Quality from Fire Management

Under all alternatives pile burning along fuel breaks and all prescribed fire activities would be completed under permit from the California Air Resource Board and the North Coast Unified Air Quality Management District (California Health and Safety Code Section 41855). Specific smoke management concerns/impacts would be addressed in prescribed fire plans. Although use of prescribed fires in Alternatives C and D would result in short-term negative air quality impacts, these impacts would be minor, as burns would be conducted during periods with high smoke dispersion potential (due to requirements of the burn permit). The long-term net effect on air quality would be positive in all of the alternatives because management activities would reduce the risk of catastrophic high-intensity wildfires and their associated impacts on air quality. Alternatives C and D would have the largest beneficial impacts.

4.13.2 Impacts to Air Quality from Recreation Management

Air quality impacts from recreation management would be minor under all alternatives and associated with increases in vehicle traffic on the area road system. Impacts from increased dust along unpaved road corridors would be mitigated in sensitive locations such as near residences and recreation sites, through the application of dust abatement materials.

4.13.3 Impacts to Air Quality from Transportation Management

Alternative B would result in minor beneficial localized impacts to air quality (reduced PM-10, or dust) by closing Windy Point and Telegraph Ridge Roads to vehicle use. Alternative D would result in minor negative localized PM-10 impacts if the Johnny-Jack Ridge Road were opened to public vehicle use. These impacts would be mitigated through the application of dust abatement materials where the route passes near residences and public use site(s).

4.13.4 Impacts to Air Quality From Grazing Management

None of the alternatives call for increased levels of grazing or activities from grazing operations, so there will be no negative impacts on air quality. None of the alternatives would affect the ozone air quality standard, as methane production from livestock production is not a criterion for non-attainment (not meeting a given standard). Methane levels are inventoried regularly from a Eureka monitoring site in Humboldt County because it is an organic gas that contributes to ozone formation. Alternative B would eliminate cattle grazing and associated methane production, providing negligible beneficial air quality impacts.

All other activities proposed under the plan would have negligible or no impacts on air quality, and so are not discussed further.

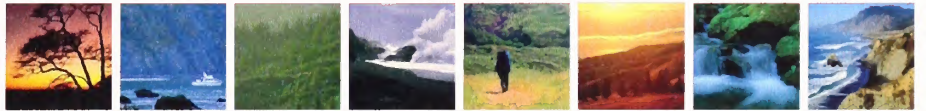
4.13.5 Cumulative Impacts To Air Quality

Prescribed fire has the potential to cause cumulative impacts to air quality, as other public agencies and private timber companies also conduct burns during optimal conditions. However, impacts are kept to minor levels through the permit program/requirements of the North Coast Unified Air Quality Management District.

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CHAPTER FIVE : Consultation + Coordination



5.0 CONSULTATION AND COORDINATION

5.1 INTRODUCTION

This document has been prepared with input from and coordination with interested agencies, organizations, and individuals. Public involvement is a vital component of NEPA for vesting the public in the planning process and allowing for full environmental disclosure. Guidance for implementing public involvement is codified in 40 CFR 1506.6, thereby ensuring that federal agencies make a diligent effort to involve the public in preparing NEPA documents.

Public involvement for the King Range RMP is being conducted in two phases, as follows:

- Public scoping prior to NEPA analysis to obtain public input on issues and developing the proposed alternatives, and
- Public review and comment on the Draft RMP/EIS, which includes analyzing possible environmental impacts and identifying the final preferred alternative.

5.2 PUBLIC SCOPING ACTIVITIES

The objectives of public scoping prior to NEPA analysis are to:

- Invite agencies and the public to participate;
- Identify a preliminary list of environmental and socioeconomic issues or themes to address in the NEPA document; and
- Identify and eliminate issues determined to be insignificant or out of the RMP's scope.

5.2.1 Notice of Intent

The scoping process for the King Range RMP/EIS opened with publication of the notice of intent (NOI) in the *Federal Register* on October 11, 2002 (volume 67, no. 198). This NOI notified the public of the BLM's intent to develop a plan and associated NEPA document for those lands within the KRNCA boundary (Appendix I). The NOI also solicited public comments and participation.

5.2.2 Advertisements and Announcements

Newspaper advertisements, a press release, and informal flyers were issued or posted to notify the public of the project, to announce the five public scoping meetings, to request public comments, and to provide contact information. Press releases were sent to local and major northern California news media. Display advertisements were published in the *San Francisco Weekly* on October 30, 2002, and November 6, 2002, and in the *Berkeley Daily Planet* on October 29, 2002, and November 1, 3, 4, and 6, 2003 (Appendix J). Flyers announcing the public scoping meetings were posted in numerous locations, including KRNCA campgrounds, and shops and organizations in Shelter Cove, Whitethorn, Petrolia, Honeydew, Redway, Garberville, Eureka, Arcata, Mendocino, Berkeley, and San Francisco (see Scoping Report, BLM 2003, for full list of posting locations). In addition, BLM staff conducted an on-air

interview at KMUD radio station (Garberville) to publicize the scoping meetings and discuss various topics relating to the plan update.

5.2.3 Project Website

An informational website, www.ca.blm.gov/arcata/kingrange/King_Range_Plan.html, was made available to the public on November 4, 2002. It provided background information on the King Range, an outline of the planning process, a schedule of upcoming meetings, plus an opportunity for people to email comments directly to the BLM offices. It had received roughly 160 hits by December 31, 2002, and was updated in February 2003, with a link to read or download the published Scoping Report. In addition, a phone-in hotline was made available for comments or questions about the planning process: 707-825-2368. The hotline did not generate many calls; three or four people called asking for directions to public meetings held in November and a few called inquiring about the scoping process and how to submit written comments.

5.2.4 Planning Update Mailers

The BLM produced a special Planning Update mailer to announce the scoping effort. These were sent via direct mail on October 16, 2002. There were 229 people on the initial mailing list, and a total of 407 sent after additions were made to the mailing list. The Planning Update included background information on the King Range, a description and timeline for the upcoming planning process, dates and locations of the public scoping meetings, and contact information for getting public comments to the BLM. It also contained a "Visioning Sheet" as an insert, which people could fill out and mail back to the BLM with their comments. A copy of this mailer, with the "Visioning Sheet," can be found in Appendix K. A second mailer was sent out in August 2003, detailing the results of the scoping process, and giving an overview of the proposed alternatives and planning schedule.

5.2.5 Public Scoping Meetings

Five public scoping meetings were held in November 2002, four in local communities close to the King Range and one in the San Francisco Bay Area: Garberville, CA on November 6; San Francisco, CA on November 7; Eureka, CA on November 13; Shelter Cove, CA on November 14; and Petrolia, CA on November 16. Four of the five meetings were held in the evening on weekdays, from 6-8pm, while the Petrolia meeting was held as a potluck in the afternoon on a Saturday, from 1-4pm. Attendance totaled over 120 individuals, with the breakdown per meeting as follows:

- Garberville: 24 people
- San Francisco: 2 people (bad winter storm that night)
- Eureka: 42 people
- Shelter Cove: 24 people
- Petrolia: 33 people

The meetings were held to gather information from the public on the future management of the KRNCA. Participants were asked questions on what they valued about these lands, what kinds of

activities or uses were important to them, and how they envisioned the area being managed in the future. The meetings utilized a PowerPoint presentation given by BLM staff on the KRNCA and planning process. Participants then split into small discussion groups to identify key themes and issues, and to suggest specific actions to meet desired conditions. The groups then reconvened to summarize their discussions, and go over the next steps in the planning process.

5.2.6 Public Scoping Results

To gather written comments, an official scoping comment period was open from October 15 to December 15, 2002, although the deadline was extended to December 31 to accommodate bad weather and the holiday season. Fifty-six “Visioning Sheets” were received, as well as forty-nine letters or emails with comments. All comments received either in writing or at public meetings are included in this analysis. Many of the submissions contained multiple comments on different topics. A total of over 1,200 comments were compiled from the meetings and the 105 written submissions received through December 31, 2002. These comments were recorded and categorized according to both source and topic. The database containing these comments is on file with the BLM and is available to the public upon request.

The clearest message from people who submitted comments during the scoping process was that they value the King Range for its primitive character—it represents a unique opportunity to experience the California coastline in a relatively undeveloped and natural state. This priority forms an overarching vision for the future of the KRNCA, and informs or relates to all other activities and management issues. The key issues identified by the public during this process fell into seven broad areas: the area’s primitive character and values, recreation use, transportation and access, education and interpretation, community support and involvement, resource conservation and management, and fire management.

A scoping report published in February 2003 details the results of public scoping. Information received through scoping was evaluated, verified, and incorporated into the RMP and EIS as appropriate.

5.2.7 Other Outreach and Cooperation

Humboldt County has been approached by the BLM regarding “cooperating agency” status. While the County has expressed interest, to date it has not established a formal relationship. Also the following agencies were notified of the planning process, and formal consultation is ongoing: the State Historic Preservation Officer (SHPO), California Coastal Commission, NOAA Fisheries, and U.S. Fish and Wildlife Service. Efforts are underway to establish a Technical Review Committee with these agencies as well as the California Department of Fish and Game, California Department of Forestry, California State Parks, and other appropriate agencies. The BLM’s Arcata Field Manager also contacted the Humboldt County Supervisors and the State’s Congressional Representative.

Staff from BLM and EDAW (BLM’s contractor assisting in the planning effort), as well as a number of community members, attended a three-day “Planning Concepts Training Workshop” in August 2002, introducing the participants to the BLM planning process. While this meeting was not a formal part of the scoping process, community participants provided input on planning and management concerns for the KRNCA. Thirty-two people attended this training, including members of the Mattole Restoration Council, Shelter Cove Resort Improvement District, Middle Mattole Conservancy, Lost Coast Properties,

Bear River Tribe of Rohnerville Rancheria, Mattole Salmon Group, Prosper Ridge Fire Rescue, Whitethorn Winery, and the Mattole Fire Safe Council.

The Bear River Tribe, Rohnerville Rancheria is the only federally recognized tribe for KRNCA issues: and while they did not contribute any specific scoping comments, they will continue to be consulted throughout the planning process. Members of this tribe did attend the three-day "Planning Concepts Training Workshop" in August 2002.

BLM staff also provided briefings or presentations for the Shelter Cove Property Owners Association (August 31, 2002), Garberville Rotary Club (November 5, 2002), and the Garberville Chamber of Commerce (November 6, 2002).

5.3 PUBLIC REVIEW AND COMMENT ON THE DRAFT RMP/EIS

Following the official public scoping comment period, the next official public comment period will open upon publication of the Draft RMP/EIS in early 2004, although BLM welcomes public input at any time during the project.

The BLM will announce the availability of the Draft RMP/EIS by publishing notices of availability in local newspapers, the project website, and the *Federal Register*, which will open a formal 90-calendar-day public comment period. The Draft RMP/EIS will be available for review and/or download from the project website. It will also be available by request in a bound paper format or via CD ROM.

The Draft RMP/EIS will be widely distributed to elected officials, regulatory agencies, interested organizations, and members of the public. Copies will also be available at local libraries and by request. Another planning update mailer will be sent out in early 2004 to the KRNCA mailing list, announcing the availability of the Draft RMP/EIS.

During the 90-day public comment period, public meetings will be held in Eureka, Garberville, Petrolia, Shelter Cove, and the Bay Area.

At the conclusion of the public comment period, the Draft RMP/EIS will be revised. A Proposed Final RMP/Final EIS will then be published. The availability of the proposed document will be announced in the *Federal Register*, and a 30-calendar-day public protest period will follow. Anyone considering protesting the proposed plan may meet with the BLM to discuss his or her protest concerns.

At the conclusion of the public protest period, the BLM California State Director will evaluate and resolve any protests. After protests are resolved, the BLM California State Director will publish the approved RMP and Record of Decision. Its availability will be announced in the *Federal Register*.

5.4 LIST OF PREPARERS

This RMP/EIS has been prepared by an interdisciplinary team of resource specialists from the BLM King Range NCA Office and Arcata Field Office. EDAW, Inc., an environmental consulting firm in San

Francisco, California, assisted the BLM in the preparation of these documents and in the planning process. These preparers are listed in Table 5-1.

Table 5-1: List of Preparers

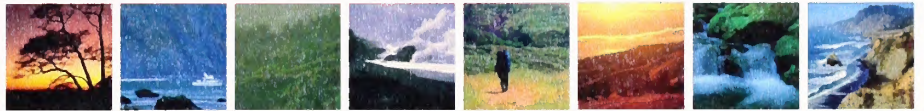
NAME	POSITION	PLANNING ROLE
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Gary Pritchard-Peterson	King Range National Conservation Area Project Manager	King Range Manager, Wild and Scenic Rivers Study Team, Wilderness Study Team
Bob Wick	Planning and Environmental Coordinator	RMP Project Lead, Wild and Scenic Rivers Study Team, Wilderness Study Team, Visual Resources, Transportation
Sky Murphy	Planner	Assistant RMP Project Lead, Wild and Scenic Rivers Study Team
Scott Adams	Outdoor Recreation Planner	Recreation, Wilderness Study Team, Wild and Scenic Rivers Study Team
Carol Sullivan	Interpretive Specialist	Interpretation/Environmental Education
Bruce Cann	Outdoor Recreation Planner	Wild and Scenic Rivers Study Team, Transportation
Paul Fritze	GIS Specialist	Mapping
Dave Fuller	Fisheries Biologist	Fisheries, Riparian/Aquatic Resources, Wild and Scenic Rivers Study Team
Marlene Grangaard	Archaeologist	Cultural Resources, Native American Consultation
Hank Harrison	Forester	Forestry, Special Forest Products
Charlotte Hawks	Realty Specialist	Lands, Rights of Way
Amy Krause	Wildlife Biologist	Wildlife
Brad Job	Engineer	Facilities, Transportation, Air/Water Quality
Sam Morrison	Geologist	Geology, Soils
Tim Jones	Fire Management Officer	Fire/Fuels, Air Quality
Jennifer Wheeler	Botanist	Botany, Range Management, Invasive Weeds
Paul Roush	Wildlife Biologist	Wildlife
Jeff Fontana	Public Affairs Officer	Public Outreach
John Price	Computer Specialist	Website Development
EDAW, Inc. Staff		
David Blau	Principal in Charge	Alternatives Development, QA/QC
Laura A. Watt	Project Manager	Project Manager, Public Outreach, Alternatives Development, Lands and Realty, Historical and Cultural Analysis
Steve Nachtman	Senior Recreation Planner	Recreation, Special Designations, Alternatives Development, QA/QC

Table 5-1: List of Preparers

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Kevin Butterbaugh	Senior Environmental Planner	QA/QC Document Review
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Jackson Underwood	Archeologist and Ethnographer	Sociocultural Analysis
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Megan Gosch	GIS Specialist	GIS Mapping
Ron LeValley	Mad River Biologists (subconsultant)	Terrestrial Ecology, Botany and Wildlife Biology, Alternatives Development
Alice Berg	Independent Contractor	Fisheries and Aquatic Biology
Bob Solari	Independent Contractor	Fire Management



CHAPTER SIX : Bibliography



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6.3 LIST OF ACRONYMS

4-WD	Four Wheel Drive
ACEC	Area of Critical Environmental Concern
ASQ	Allowable Sale Quantity
AUM	Animal Unit Month
BLM	Bureau of Land Management
BMP	Best Management Practices
CC	California Coastal
CCC	California Conservation Corps
CDF	California Department of Forestry and Fire Protection
CDFG	California Department of Fish and Game
CEQ	Council on Environmental Quality

CFR	Code of Federal Regulations
CNDD	California Natural Diversity Database
CNPS	California Native Plant Society
CRMP	Cultural Resource Management Plan
CWA	Clean Water Act
DOD	Department of Defense
EFH	Essential Fish Habitat
EIS	Environmental Impact Statement
EO	Executive Order
EPA	Environmental Protection Administration
ESA	Endangered Species Act
FAA	Federal Aviation Administration
FLPMA	Federal Land Policy and Management Act
FWS	Fish and Wildlife Service
GIS	Geographic Information System
GLO	General Land Office
HSU	Humboldt State University
IMP	Interim Management Policy
KRNCA	King Range National Conservation Area
LCIA	Lost Coast Interpretive Association
LCT	Lost Coast Trail
LSOG	Late Successional Old Growth
LSR	Late Successional Reserve
MNBMC	Migratory Nongame Birds of Management Concern
MOU	Memorandum of Understanding
MPA	Multiple Pair Area
MSA	Magnuson-Stevens Act
NAGPRA	Native American Graves Protection and Repatriation Act
NCA	National Conservation Area
NCUAQMD	North Coast Unified Air Quality Management District
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NLCS	National Landscape Conservation System
NOAA	National Oceanic and Atmospheric Administration
NOI	Notice of Intent
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places
NWFP	Northwest Forest Plan
NWSRS	National Wild and Scenic River System
OHV	Off-Highway Vehicle
ORV	Outstanding Resource Value
PALCO	Pacific Lumber Company
PILT	Payments in Lieu of Taxes
PL	Public Law
RCRA	Resource Conservation and Recovery Act
RDM	Residual Dry Matter

RMP	Resource Management Plan
RNA	Resource Natural Area
ROD	Record of Decision
ROW	Right-of-Way
RR	Riparian Reserve
RWQCB	Regional Water Quality Control Board
S&G	Standards and Guidelines
S&M	Survey and Manage
SDWA	Safe Drinking Water Act
SHPO	State Historic Preservation Officer
SONCC	Southern Oregon/Northern California Coast
SWRCB	State Water Resources Control Board
T&E	Threatened and Endangered
TMDL	Total Maximum Daily Load
TOT	Transient Occupancy Tax
TSI	Timber Stand Improvement
USDA	U.S. Department of Agriculture
USDI	U.S. Department of Interior
VRM	Visual Resource Management
WSA	Wilderness Study Area

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APPENDICES



APPENDIX A

Public Law 91-477

89 Stat. 1733, 1738

October 11, 1978

105 Stat.

APPENDIX A

KING RANGE ACT OF 1970

APPENDIX A

Public Law 91-476
91st Congress, H.R. 12870
October 21, 1970

AN ACT

94 Stat/67

To provide for the establishment of the King Range National Conservation Area in the State of California

Be it enacted by the Senate and the House of Representatives of the United States of America in Congress assembled, That the Secretary of the Interior (hereinafter referred to as the “Secretary”) is hereby authorized and directed, after compliance with Sections 3 and 4 of this Act, to establish, within the boundaries described in Section 9 of this Act, the King Range National Conservation Area in the State of California (hereinafter referred to as the “Area”), and to consolidate and manage the public lands in the area with the purpose of conserving and developing, for the use and benefit of the people of the United States, the lands and other resources therein under a program of multiple usage and of sustained yield.

Section 2. (a) In the management of lands in the area, the Secretary shall utilize and develop the resources in such a manner as to satisfy all legitimate requirements for the available resources as fully as possible without undue denial of any of such requirements and without undue impairment of any of the resources, taking into consideration total requirement and total availability of resources, irrespective of ownership or location.

(b) The policy set forth in subsection (a) implies—

(1) that there will be a comprehensive, balanced, and coordinated plan of land use, development, and management of the Area, and that such plan will be based on an inventory and evaluation of the available resources and requirements for such resources, and on the topography and other features of the Area.

(2) that the plan will indicate the primary or dominant uses which will be permitted on various portions of the Area.

(3) that the plan will be based on a weighing of the relative values to be obtained by utilization and development of the resources for alternative possible uses, and will be made with the object of obtaining the greatest values on a continuing basis, and that due consideration will be given to intangible values as well as to tangible values such as dollar return or production per unit.

(4) that secondary or collateral uses may be permitted to the extent that such uses are compatible with and do not unduly impair the primary or dominant uses, according to seasonable schedule or otherwise.

(5) that management of the renewable resources will be such as to obtain a sustained, regular, or periodic yield or supply of products or services without impairment of the productivity, or the enjoyment or carrying capacity of the land.

(6) that the plan will be reviewed and reevaluated periodically.

(7) that the resources to be considered are all the natural resources including but not limited to the soils, bodies of water, including the shorelines thereof, forest growth including timber, vegetative cover including forage, fish, and other wildlife, and geological resources including minerals.

(8) that the uses to be considered are all of the legitimate uses of such resources including but not limited to all forms of outdoor recreation including scenic enjoyment, hunting, fishing, hiking, riding, camping, picnicking, boating, and swimming, all uses of water resources, watershed management, production of timber and other forest products, grazing and other agricultural uses, fish and wildlife management, mining, preservation of ecological balance, scientific study, occupancy and access.

Section 3. The Secretary shall use public and private assistance as he may require, for the purpose of preparing for the Area a program of multiple usage and of sustained yield of renewable natural resources. Such program shall include but need not be limited to (1) a quantitative and qualitative analysis of the resources of the Area; (2) the proposal boundaries of the Area; (3) a plan of land use, development, and management of the Area together with any proposed cooperative activities with the State of California, local governments, and others; (4) a statement of expected costs and an economic analysis of the program with particular reference to costs to the United States and expected economic effects on local communities and governments; and (5) an evaluation by the Secretary of the program in terms of the public interest.

Section 4. The Secretary shall establish the Area after a period of at least ninety calendar days from and after the date that he has (1) submitted copies of the program required by section 3 to the President of the Senate and the Speaker of the House of Representatives, the Governor of the State of California, and the governing body of the county or counties in which the area is located and (2) published a notice of intention to establish the area in the Federal Register and in at least two newspapers which circulate generally within the Area.

Section 5. The Secretary is authorized—

(1) to conduct a public hearing or hearings to receive expression of local views relating to establishment of the area.

(2) to acquire by donation, by purchase with donated funds or with funds appropriated specifically for that purpose, or by exchange, any land or interest in land within the area described in section 9, which the Secretary, in his judgment, determines to be desirable for consolidation of public lands within the Area in order to facilitate efficient and beneficial management of the public lands or otherwise to accomplish the purposes of this Act: *Provided*, That the Secretary may not acquire, without the consent of the owner, any such lands or interests therein which are utilized on the effective date of this Act for residential, agricultural, or commercial purposes so long as he finds such property is devoted to uses compatible with the purposes of this Act. Any lands or interests in lands acquired by the United

States under the authority of this section shall, upon acceptance of title, become public lands and shall become a part of the area subject to all the laws and regulations applicable thereto.

(3) in the exercise of his authority to acquire land or interests in land by exchange under this Act, to accept title to any non-Federal land located within the Area and to convey to the grantor of such land not to exceed an equal value of surveyed, unappropriated, and unreserved public lands or interests, in lands and appropriated funds when in his judgment the exchange will be in the public interest and in accordance with the following:

(A) The public lands offered in exchange for non-Federal lands or interests in non-Federal lands must be in the same county or counties, and must be classified by the Secretary as suitable for exchange. For a period of five years, any such public lands suitable for transfer to nonpublic ownership shall be classified for exchange under this Act.

(B) If the lands or interests in lands offered in exchange for public lands have a value at least equal to two-thirds of the value of the public lands, the exchange may be completed upon payment to the Secretary of the difference in value, or the submittal of a cash deposit or a performance bond in an amount at least equal to the difference in value assuring that additional lands acceptable to the Secretary and at least equal to the difference in value will be conveyed to the Government within a time certain to be specified by the Secretary.

(C) If the public lands offered in exchange for non-Federal lands or interests in non-Federal lands have a value at least equal to two-thirds of the value of the non-Federal lands, the exchange may be completed upon payment by the Secretary of the difference in value.

(D) Either party to an exchange under this Act may reserve minerals, easements, or rights of use either for its own benefit, for the benefit of third parties, or for the benefit of the general public. Any such reservation, whether in lands conveyed to or by the United States, shall be subject to such reasonable conditions respecting ingress and egress and the use of the surface of the land as may be deemed necessary by the Secretary. When minerals are reserved in a conveyance by the United States, any person who prospects for or acquires the right to mine and remove the reserved mineral deposits shall be liable to the surface owners according to their respective interests for any actual damage to the surface or to the improvements thereon resulting from prospecting, entering, or mining operations; and such persons shall, prior to entering, either obtain the surface owner's written consent, or file with the Secretary a good and sufficient bond or undertaking to the United States in an amount acceptable to the Secretary for the use and benefit of the surface owner to secure payment of such damages as may be determined in an action brought on the bond or undertaking in a court of competent jurisdiction.

(4) in the exercise of his authority to purchase lands under this Act to pay for any such purchased lands their fair market value, as determined by the Secretary, who may, in his discretion, base his determination on an independent appraisal obtained by him.

(5) to identify the appropriate public uses of all of the public lands and interests therein within the Area. Disposition of the public lands within the Area, or any of the lands subsequently acquired as part of the area, is prohibited, and the lands in the Area described in Section 9 of this Act are hereby withdrawn from all forms of entry, selection, or location under existing or subsequent law, except as

provided in Section 6 of this Act. Notwithstanding any provision of this section, the Secretary may (A) exchange public lands or interests therein within the area for privately owned lands or interests therein also located within the area, and (B) issue leases, licenses, contracts, or permits as provided by other laws.

(6) to construct or cause to be constructed and to operate and maintain such roads, trails, and other access and recreational facilities in the area as the Secretary deems necessary and desirable for the proper protection, utilization, and development of the area.

(7) to reforest and revegetate such lands within the area and install such soil- and water-conserving works and practices to reduce erosion and improve forage and timber capacity as the Secretary deems necessary and desirable.

(8) to enter into such cooperative arrangements with the State of California, local governmental agencies, and nonprofit organizations as the Secretary deems necessary or desirable concerning but not limited to installation, construction, maintenance, and operation of access and recreational facilities, reforestation, revegetation, soil and moisture conservation, and management of fish and wildlife including hunting and fishing and control of predators. The Secretary shall permit hunting and fishing on land and waters under the jurisdiction within the boundaries of the recreation area in accordance with the applicable laws of the United States and the State of California, except that the Secretary may designate zones where, and establish periods when, no hunting or fishing shall be permitted for reasons of public safety, administration, fish and wildlife management, or public use and enjoyment. Except in emergencies, any regulations of the Secretary pursuant to this section shall be put into effect only after consultation with the appropriate State fish and game department.

(9) to issue such regulations and to do such other things as the Secretary deems necessary and desirable to carry out the terms of this Act.

Section 6. (a) Subject to valid existing rights, nothing in this Act shall affect the applicability of the United States mining laws on the federally owned lands within the Area, except that all prospecting commenced or conducted and all mining claims located after the effective date of this Act shall be subject to such reasonable regulations as the Secretary may prescribe to effectuate the purposes of this Act. Any patent issued on any mining claim located after the effective date of this Act shall recite this limitation and continue to be subject to such regulations. All such regulations shall provide, among other things, for such measures as may be reasonable to protect the scenic and esthetic values of the Area against undue impairment and to assure against pollution of the streams and waters within the Area.

(b) Nothing in this section shall be construed to limit or restrict rights of the owner or owners of any existing valid mining claim.

Section 7. Except as may otherwise be provided in this Act, the public lands within the area shall be administered by the Secretary under any authority available to him for the conservation, development, and management of natural resources on public lands in California withdrawn by Executive Order Numbered 6910, dated November 26, 1934, to the extent that he finds such authority will further the purposes of this Act.

Section 8. The objectives of Executive Order Numbered 5237, dated December 10, 1929, which withdraw certain public lands for classification, having been accomplished by the enactment of this Act, that Executive order is hereby revoked effective as of the date the Secretary establishes the area.

Section 9. (a) The survey and investigation area referred to in the first section of this Act is described as follows:

MOUNT DIABLO MERIDIAN, CALIFORNIA

- Township 24 North, Range 19 West, Sections 4 and 5.

HUMBOLDT MERIDIAN, CALIFORNIA

- Township 5 south, range 1 east, all sections in township.
- Township 5 south, range 2 east, section 6, lots 4 through 9; 16 through 21; and 24 through 26; section 7, lots 2 through 7; 10 through 15; section 18, lots 1 through 16; section 19, lots 1 through 16; southwest quarter northeast quarter and west half southeast quarter and sections 30 and 31; section 32, southwest quarter northeast quarter; south half northwest quarter; northwest quarter northwest quarter; southwest quarter and west half southeast quarter.
- Township 4 south, range 1 west, all sections in township.
- Township 4 south, range 1 east; section 4, south half; south half northeast quarter and south half northwest quarter; sections 5 through 9; 15 through 23; section 24, west half; section 25, west half; sections 26 through 35; section 36, lots 3 through 5 and 8 through 11 and southeast quarter.
- Township 4 south, range 2 east, section 31, west half southeast quarter and southwest quarter.
- Township 3 south, range 2 west, section 12, southeast quarter southeast quarter; sections 13 through 16 and 22 through 25.
- Township 3 south, range 1 west, section 9, southwest quarter southwest quarter; section 12, south half southeast quarter and south half southwest quarter; sections 13 through 36.
- Township 3 south, range 1 east, section 18, lots 1 through 4; section 19, lots 1 and 2, southwest quarter and west half southeast quarter; section 29, southwest quarter northwest quarter and west half southwest quarter; section 30 and 31; section 32, west half.
- Township 2 south, range 2 west, section 31, north half of lot 2 of the southwest quarter (43.40 acres of public land withdrawn by Executive Order 5237 of December 10, 1929); and 22.8 acres of acquired fee lands described by metes and bounds in section 31, township 2 south, range 2 west, and section 36, township 2 south, range 3 west; and 31.27 acres of acquired easements described by metes and bounds across certain sections in township 2 south, ranges 2 and 3 west.

(b) In addition to the lands described in subsection (a) of this section, the Secretary is authorized to acquire such land outside the area but in close proximity thereto as is necessary to facilitate sound management. Acquisition hereunder shall, however, not exceed three hundred and twenty acres and shall be limited to such purposes as headquarters facility requirements, ingress and egress routes and, where necessary, to straighten boundaries or round out acquisitions.

Section 10. There are authorized to be appropriated such sums as may be necessary to accomplish the purposes of this Act, but not to exceed \$1,500,000 for the purchase of lands and interests in lands and not to exceed \$3,500,000 for the construction of improvements.

Approved October 21, 1970.

LEGISLATIVE HISTORY:

HOUSE REPORT NO. 91-1440 (Comm. On Interior and Insular Affairs).

SENATE REPORT No. 91-1270 (Comm. On Interior and Insular Affairs).

CONGRESSIONAL RECORD, Vol. 116 (1970):

Sept. 21, considered and passed House.

Oct. 7, considered and passed Senate, amended.

Oct. 8, House occurred in Senate amendments.

APPENDIX B - LAND ACQUISITION AND EXCHANGE

Table B. Type of Acquisition

Acquisition Type	Count	Percentage
Fee Simple	10	40%
Leasehold	15	60%
Condemnation	5	20%
Other	5	20%
Total	35	100%

APPENDIX B

Table B. Land Acquisition by Type

LAND ACQUISITION AND EXCHANGE			
Year	Count	Percentage	Total Count
1970	10	28.6%	35
1971	5	14.3%	35
1972	15	42.9%	35
1973	5	14.3%	35
1974	10	28.6%	35
1975	5	14.3%	35
1976	10	28.6%	35
1977	5	14.3%	35
1978	10	28.6%	35
1979	5	14.3%	35
1980	10	28.6%	35
1981	5	14.3%	35
1982	10	28.6%	35
1983	5	14.3%	35
1984	10	28.6%	35
1985	5	14.3%	35
1986	10	28.6%	35
1987	5	14.3%	35
1988	10	28.6%	35
1989	5	14.3%	35
1990	10	28.6%	35
1991	5	14.3%	35
1992	10	28.6%	35
1993	5	14.3%	35
1994	10	28.6%	35
1995	5	14.3%	35
1996	10	28.6%	35
1997	5	14.3%	35
1998	10	28.6%	35
1999	5	14.3%	35
2000	10	28.6%	35
2001	5	14.3%	35
2002	10	28.6%	35
2003	5	14.3%	35
2004	10	28.6%	35
2005	5	14.3%	35
2006	10	28.6%	35
2007	5	14.3%	35
2008	10	28.6%	35
2009	5	14.3%	35
2010	10	28.6%	35
2011	5	14.3%	35
2012	10	28.6%	35
2013	5	14.3%	35
2014	10	28.6%	35
2015	5	14.3%	35
2016	10	28.6%	35
2017	5	14.3%	35
2018	10	28.6%	35
2019	5	14.3%	35
2020	10	28.6%	35
TOTAL	35	100%	35

* Source: Bureau of Economic Analysis, Department of Commerce, Bureau of Economic Analysis, "Land Acquisition and Exchange" (2020).

APPENDIX B – LAND ACQUISITION AND EXCHANGE

Table 1: Type of Acquisition

TYPE OF ACQ.:	# PARCELS	ACREAGE TOTAL
Purchase	69	3,076.33
Exchange	46	22,207.89
Donation	4	0.69
Condemnation	2	440.08 (360 = “friendly” in 1975)
Total	121	25,724.99

Table 2: Land Transactions by Year

YEAR	# PARCELS	# ACRES ACQUIRED	# ACRES EXCHANGED	TIMBER ON EXCHANGED ACRES (TBF)*
1966	1	160	120	
1969	2	200	240	
1973	5	1812.92	360	775 (gained 2466)
1974	7	3691.30	1424.54	17688
1975	7	1862.96	1130.61	14379
1976	3	927.77	164.28	2850
1977	2	729.59	160	151
1978	4	2126.15	713.77	2960 (gained 522)
1979	2	1875.46	280	7879 (gained 919)
1980	3	111.28	0	0
1981	3	610	200	3062 (gained 1813)
1982	4	3024.68	2065.36	51599
1983	7	4612.83	3262.95	55152
1984	7	1756.66	1699.99	27805
1985	16	376.524	476.24	1077
1986	8	581.67	200	1241
1987	9	348.02	280	0
1988	3	86.57	0	0
1989	6	337.61	0	0
1990	3	120.21	0	0
1991	4	118.98	0	0
1992	1	44.88	0	(gained 666)
1993	4	1.02	0	0
1994	1	3.6	0	0
1998	7	204.006	0	0
2001	2	0.3	0	0
TOTALS		25,724.99	12,777.74	186,618 (gained 6,386)

* note that this figure does not include previously forested but cut-over lands acquired by BLM.

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APPENDIX C

**WILD AND SCENIC RIVER ELIGIBILITY AND
SUITABILITY STUDY**

APPENDIX C

WILD AND SCENIC RIVER ELIGIBILITY AND SUITABILITY STUDY

WILD AND SCENIC RIVER SYSTEM

The Wild and Scenic Rivers Act of 1968 (Public Law 90-542) was passed by Congress to preserve riverine systems that contain outstanding features. The law was enacted during an era when many rivers were being dammed or diverted, to balance these developments by ensuring that certain rivers and streams remain in their free-flowing condition. The BLM is mandated to evaluate stream segments on public lands as potential additions to the National Wild and Scenic Rivers System (NWSRS) during the Resource Management Plan (RMP) Process under Section 5(d) of the Act. The NWSRS study guidelines are found in BLM Manual 8351, U.S. Departments of Agriculture and Interior Guidelines, published in *Federal Register* Vol. 7, No.173, September 7, 1982 and in various BLM memoranda and policy statements. Formal designation as a Wild and Scenic River requires Congressional legislation, or designation can be approved by the Secretary of Interior if nominated by the Governor of the state containing the river segment. The following discussion provides information on how BLM considered waterways for potential inclusion in the NWSRS.

The NWSRS study process has three distinct steps:

- Determine what rivers or river segments are eligible for NWSRS designation
- Determine the potential classification of eligible river segments as wild, scenic, recreational or any combination thereof
- Conduct a suitability study to determine if the river segments are suitable for designation as components of the NWSRS

This report documents all three steps of the process for the streams in the planning area.

ELIGIBILITY OF KING RANGE STREAMS

Identification

A variety of sources were reviewed to identify waterways which could have potential for wild and scenic river designation. They include the Nationwide Rivers Inventory List, the Outstanding Rivers List compiled by American Rivers, Inc., river segments identified by state or local government, river segments identified by the public during formulation of this Resource Management Plan, and river segments identified by the planning team as having potential to meet Wild and Scenic River eligibility requirements.

The Wild and Scenic Rivers Act defines a river as a “flowing body of water or estuary or a section, portion, or tributary thereof, including rivers, streams, creeks, runs, kills, rills, and small lakes.”

Thirty-five stream segments totaling 103 miles within or immediately adjacent to the KRNCA boundaries were identified for review. Some streams were divided into segments, based on land status or classification criteria (see below). These rivers are listed in Table 1: Wild and Scenic River Inventory, and shown on Figure 3-2.

Eligibility Determination

Each identified river segment was evaluated to determine whether it is eligible for inclusion in the NWSRS. To be eligible, a river segment must be “free flowing” and must possess at least one “outstandingly remarkable value” (ORV). These values include:

- Scenic
- Cultural
- Recreational
- Ecological
- Geological
- Riparian
- Fish
- Botanical
- Wildlife
- Hydrological
- Historical
- Scientific

To be considered as “outstandingly remarkable,” a river-related value must be a unique, rare, or exemplary feature that is significant at a comparative regional or national scale. Only one such value is needed for eligibility. All values should be directly river related, meaning they should:

- Be located in the river or on its immediate shorelands (generally within ¼ mile on either side of the river);
- Contribute substantially to the functioning of the river ecosystem; and/or
- Owe their location or existence to the presence of the river.

These are the only factors considered in determining the eligibility of a river segment. All other relevant factors are considered in determining suitability. A river need not be navigable by watercraft to be eligible. For purposes of eligibility determination, the volume of flow is sufficient if it is enough to maintain the outstandingly remarkable value(s) identified within the segment.

The KRNCA has long been recognized as having significant values as a wild, rugged, coastal landscape. Approximately 100 inches of annual rainfall contributes to the abundance of rivers and streams that are integral to the values of the area. The stream systems can be generally categorized into two groups based on their geology and other watershed characteristics:

1. West Slope Streams: West slope stream segments include many short, steep watersheds running directly to the ocean. None of the watersheds penetrate further inland than the spine of the King Crest which extends no further than three miles from the ocean. The west slope offers a backcountry setting of rugged coastal mountains and undeveloped coastline unique in California. River segments pass through a mosaic of vegetation types including Douglas fir, tanoak, and chaparral. Natural landslides

from intense winter storms are common in these watersheds. The lower segments of these streams are focal points for primitive backcountry recreational activities such as hiking, backpacking, and equestrian use on the Lost Coast Trail, one of the few coastal backpacking trails in the U.S. The entire west slope has received a Class “A” scenery rating in the BLM’s visual resource management program inventory due to its wild, rugged nature and outstanding ocean views. A number of significant archaeological sites exist at creek mouths and most of the perennial streams include spawning and rearing habitat for federally listed threatened steelhead populations.

2. East Slope Streams: East slope watersheds, although still steep, are generally more extensive with longer, lower gradient stream channels. All east slope streams feed into the larger Mattole River watershed, which envelops the eastern side of the KRNCA as it flows northward, emptying into the ocean near Petrolia. The Mattole is one of the few major rivers in California that has no dams along its entire length. It is a major spawning stream for steelhead trout and Coho and Chinook salmon, all federally listed as threatened. Like most rivers in northwest California, the Mattole watershed was extensively logged from the 1940s-70s, increasing erosion; the resulting sedimentation has severely impacted fishery values. The east slope tributaries within the KRNCA contain some of the remaining habitat most suitable for anadromous fish spawning and rearing.

Vegetation is dominated by Douglas fir and tanoak forest with chaparral on the upper slopes, and extensive old-growth forests along the major drainages. As a result, the watersheds contain important wildlife values including verified activity centers for the northern spotted owl, also federally listed as threatened. Other values include some rare plants, archaeological sites, and scenic and recreational values.

Table 1 summarizes the eligibility evaluation of all identified river segments. The table includes information on the length of stream segments studied, BLM acreage (including a ¼ mile corridor on either side of the stream), indicates if outstandingly remarkable value(s) are present, and identifies the potential classification of each eligible segment. Table 2 gives more detailed descriptions of each eligible river segment’s location and a brief narrative of its outstandingly remarkable value(s).

CLASSIFICATION

The Wild and Scenic Rivers Act and subsequent interagency guidelines provide the following direction for establishing preliminary classifications for eligible rivers:

Wild Rivers: Those rivers or sections of rivers that are free of impoundments and generally inaccessible except by trail, with watersheds or shorelines essentially primitive and waters unpolluted. These represent vestiges of primitive America.

Scenic Rivers: Those rivers or sections of rivers that are free of impoundments, with shorelines or watersheds still largely primitive and shorelines largely undeveloped, but accessible in places by roads.

Recreational Rivers: Those rivers or sections of rivers readily accessible by road or railroad that may have some development along their shorelines, and that may have undergone some impoundment or diversion in the past.

TABLE1: WILD AND SCENIC RIVER INVENTORY

River Name/Segment	Reason for Consideration (1)	BLM Length (mi.)	Other Length (mi.)	Free Flowing	ORV (2)	Eligibility	Preliminary Classification	BLM Acres	Percent of Corridor (%)
Bear Creek, Main Stem	C	2.1		5.5 yes	E,H	Eligible	Wild	568.7	27.8
Bear Trap Creek	C			0.8 yes	A	Noneligible		797.5	75.6
Big Creek	C	4.4		0.0 yes	E	Eligible	Wild	584.0	100.0
Big Finley Creek	C	3.1		1.9 yes	E,G	Eligible	Wild	1141.5	61.7
Big Flat Creek	C	11.0		0.0 yes	B,C,E,G	Eligible	Wild	948.8	99.9
Bridge Creek	C	2.7		4.0 yes	A	Noneligible		899.4	40.6
Buck Creek	C	1.7		0.0 yes	B,C	Eligible	Wild	282.5	100.0
Chaparral Creek	C	0.5		0.5 yes	A	Noneligible		168.7	54.1
Chemise Creek	C	1.3		0.0 yes	A	Noneligible		209.0	100.0
Cooskie Creek	C	0.9		4.5 yes	B,C,E,G	Eligible	Wild	322.9	16.9
Fourmile Creek	C	4.3		1.3 yes	B,C,E,G,H	Eligible	Wild	1399.0	77.2
Gitchell Creek	C	4.0		0.0 yes	B,C,E	Eligible	Wild	641.3	100.0
Honeydew Creek	C	14.8		4.0 yes	E,H	Eligible	Wild	4406.7	78.7
Horse Mountain Creek	C	4.1		0.0 yes	B,C,E	Eligible	Wild	598.9	100.0
Humboldt Creek	C	0.2		1.1 yes	F	Noneligible		51.5	14.6
Indian Creek	C	1.2		1.4 yes	F,G	Eligible	Wild	424.3	45.5
Kinsey Creek	C	1.6		0.0 yes	B,C	Eligible	Wild	230.5	100.0
Little Finley Creek	C	1.8		1.2 yes	E,F,G	Eligible	Wild	569.2	59.7
Mattile River	A,B	4.0		65.7 yes	B,C,E,F,G,H	Eligible	Scenic	406.3	5.8
McKee Creek	C	1.8		0.0 yes	A	Noneligible		209.1	100.0
Mill Creek	C	2.2		0.0 yes	E	Eligible	Scenic	609.9	98.2
Nooning Creek	C	1.8		0.0 yes	E	Eligible	Scenic	595.7	100.0
North Fork Bear Creek	C	4.4		1.8 yes	E,H	Eligible	Scenic	1771.0	71.3
Oat Creek	C	1.8		0.0 yes	B,C,E	Eligible	Wild	283.6	100.0
Randall Creek	C	2.0		0.0 yes	B,C,E,G	Eligible	Wild	321.6	100.0
Sea Lion Gulch	C	1.3		0.0 yes	B,C	Eligible	Wild	228.3	100.0
Shipman Creek	C	4.2		0.0 yes	B,C,E,G	Eligible	Wild	658.9	100.0
South Fork Bear Creek (A)	C	1.4		1.3 yes	E,F,G,H	Eligible	Recreational	492.9	50.7
South Fork Bear Creek (B)	C	7.6		0.5 yes	E,F,G,H	Eligible	Scenic	2408.9	93.9
Spanish Creek	C	2.4		0.0 yes	B,C,E,G	Eligible	Wild	323.1	100.0
Squaw Creek	C	7.5		21.5 yes	E	Eligible	Wild	2485.9	25.9
Stansberry Creek	C	2.4		0.0 yes	A	Noneligible		76.9	100.0
Telegraph Creek	C	0.7		3.2 yes	E	Eligible	Scenic	359.9	18.4
Whale Gulch	C	3.1		1.8 yes	B,C,F	Eligible	Scenic	476.0	64.0
Woods Creek	C	1.5		1.0 yes	E,H	Eligible	Wild	521.6	60.3

(1) A – National Rivers Inventory
 B – 1988 Outstanding Rivers List, American Rivers, Inc.
 C – Potential eligible rivers inventory, King Range planning team
 D – Other

(2) A – Non-existent
 B – Scenic
 C – Recreational
 D – Geological
 E – Fish and Wildlife
 F – Historical
 G – Cultural
 H – Other (including Ecological)

(3) Shoreline and adjacent lands within ¼ mile of the river segment not to exceed 320 acres per mile measured from the ordinary high water mark on both sides of the river.

TABLE 2: ELIGIBLE KRNCA RIVER SEGMENTS

River Segment	Segment Description	Description of Outstanding Values
Bear Creek, Main Stem	From confluence with North Fork and South Fork in sec. 9, T4S, R1E to private land boundary in south 1/2 or sec. 11, T4S, R1E. Includes all perennial tributaries.	Contains spawning and rearing habitat for federally listed steelhead and Coho and Chinook salmon.
Bear Creek, North Fork	From its headwaters in secs. 6 and 7, T4S, R1E to confluence with main stem in sec. 9. Includes all perennial tributaries.	Contains spawning and rearing habitat for federally listed steelhead and Coho and Chinook salmon. Contains verified activity center for federally listed threatened northern spotted owl. Contains <i>Usnea longissima</i> (rare lichen) listed by CA Lichen Society as a Survey and Manage species.
Bear Creek, South Fork (segment A)	From its headwaters just east of Wailaki Campground (unsurveyed section) to Shelter Cove road.	Contains spawning and rearing habitat for federally listed steelhead and Coho and Chinook salmon. Contains many significant prehistoric and historic sites. Contains <i>Usnea longissima</i> (rare lichen) listed by CA Lichen Society as a Survey and Manage species.
Bear Creek, South Fork (segment B)	From Shelter Cove road to confluence with main stem in sec. 9, T4S, R1E. Includes all perennial tributaries.	Contains spawning and rearing habitat for federally listed steelhead and Coho and Chinook salmon. Contains verified activity center for federally listed threatened northern spotted owl. Contains many significant prehistoric and historic sites. Contains <i>Usnea longissima</i> (rare lichen) listed by CA Lichen Society as a Survey and Manage species.
Big Creek	From its headwaters in sec. 28, T3S, R1W to the Pacific Ocean. Includes all perennial tributaries.	Scenic class "A" rating. Part of unique coastal backcountry backpacking and camping area. Contains spawning and rearing habitat for federally listed threatened steelhead.
Big Finley Creek	From its headwaters in sec. 35, T4S, R1E to its junction with the Mattole River. Includes all perennial tributaries.	Contains spawning and rearing habitat for federally listed threatened steelhead. Contains verified activity center for federally listed threatened northern spotted owl. Contains several significant prehistoric sites.

River Segment	Segment Description	Description of Outstanding Values
Big Flat Creek	North Fork from its headwaters in sec. 35, T3S, R1W and Main fork from its headwaters in sec. 36, T3S, R1W to Pacific Ocean. Includes all perennial tributaries.	Scenic class "A" rating. Part of unique coastal backcountry backpacking and camping area. Popular hiking trail extends along 2 miles of creek. Contains spawning and rearing habitat for federally listed threatened steelhead. Contains several large, significant prehistoric sites near mouth of creek.
Buck Creek	From its headwaters in sec. 18, T4S, R1E to the Pacific Ocean.	Scenic class "A" rating. Part of unique coastal backcountry backpacking and camping area. Popular hiking trail near creek connects King Crest Trail with beach.
Cooskie Creek	From intersection with Chaparral Creek in sec. 9, T3S, R2W to the Pacific Ocean.	Scenic class "A" rating. Provides important upland trail access and camping. Contains spawning and rearing habitat for federally listed threatened steelhead. Contains significant prehistoric sites.
Fourmile Creek	From its headwaters in sec. 27, T2S, R2W to Pacific Ocean.	Scenery class "A" rating. Part of unique coastal backcountry backpacking and camping area. Contains spawning and rearing habitat for federally listed threatened steelhead. Contains significant prehistoric site.
Gitchell Creek	From its headwaters in sec. 17, T4S, R1E to the Pacific Ocean. Includes all perennial tributaries.	Scenery class "A" rating. Part of unique coastal backcountry backpacking and camping area. Contains spawning and rearing habitat for federally listed threatened steelhead.
Honeydew Creek	Includes West Fork, East Fork, and Main Fork from headwaters in sec. 26, T3S, R1W to junction with Mattole River. Includes all perennial tributaries.	Contains spawning and rearing habitat for federally listed threatened steelhead and Coho and Chinook salmon. Contains verified activity center for federally listed threatened northern spotted owl.
Horse Mountain Creek	From its headwaters in sec. 28, T4S, R1E to the Pacific Ocean. Includes all perennial tributaries.	Scenery Class "A" rating. Part of unique coastal backcountry backpacking and camping area. Contains spawning and rearing habitat for federally listed threatened steelhead. Contains verified activity center for federally listed threatened northern spotted owl.

River Segment	Segment Description	Description of Outstanding Values
Humboldt Creek	From its headwaters in sec. 9, T5S, R1E in Shelter Cove to the Pacific Ocean.	One pre-historic site of unknown value.
Indian Creek	From its headwaters in sec. 27, T2S, R2W to its junction with the Mattole River. Includes all perennial tributaries.	Contains significant prehistoric and historic sites.
Kinsey Creek	From its headwaters in sec. 20, T3S, R1W to the Pacific Ocean. Includes all perennial tributaries.	Scenery Class "A" rating. Part of unique coastal backcountry backpacking and camping area.
Little Finley Creek	From its headwaters in sec. 14, T4S, R1E to its junction with the Mattole River. Includes all perennial tributaries.	Contains spawning and rearing habitat for federally listed steelhead. Contains verified activity center for federally listed threatened northern spotted owl. Contains significant prehistoric and historic sites.
Mattole River	From private land boundary between sec. 8 and 17, T2S, R2W to the Pacific Ocean.	Major recreation site. Campground, hunting, and wildlife viewing area. Contains spawning and rearing habitat for federally listed threatened steelhead and Coho and Chinook salmon. Estuary contains endangered <i>Lepomis carnosus</i> , and BLM sensitive (1B) <i>Astragalinus pycnostachyus</i> , <i>Sidalcea malacchroica</i> , <i>Castilleja affinis littoralis</i> , and <i>Gilia multiflora</i> .
Mill Creek	From its headwaters in sec. 21, T2S, R2W to its junction with the Mattole River. Includes all perennial tributaries.	Contains verified activity center for federally listed threatened northern spotted owl. Contains spawning and rearing habitat for federally listed threatened steelhead and Coho salmon. Only known Coho population along the lower Mattole watershed.
Nooning Creek	From its headwaters in sec. 1, T5S, R1E to its junction with the Mattole River. Includes all perennial tributaries.	Contains spawning and rearing habitat for federally listed threatened steelhead and Coho and Chinook salmon.
Oat Creek	From its headwaters in sec. 19, T3S, R1W to the Pacific Ocean. Includes all perennial tributaries.	Scenery class "A" rating. Part of unique coastal backcountry backpacking and camping area. Contains spawning and rearing habitat for federally listed threatened steelhead.

APPENDIX C

River Segment	Segment Description	Description of Outstanding Values
Randall Creek	From its headwaters in sec. 13, T3S, R2W to the Pacific Ocean.	Scenery class "A" rating. Part of unique coastal primitive backpacking and camping area. Contains spawning and rearing habitat for federally listed threatened steelhead.
Sea Lion Gulch	From its headwaters in sec. 32, T2S, R2W to the Pacific Ocean.	Scenery class "A" rating. Part of unique coastal primitive backpacking and camping area.
Shipman Creek	From its headwaters in sec. 1, T4S, R1W to the Pacific Ocean. Includes all perennial tributaries.	Scenery class "A" rating. Part of unique coastal primitive backpacking and camping area. Contains spawning and rearing habitat for federally listed threatened steelhead.
Spanish Creek	From its headwaters in sec. 18, T3S, R1W to the Pacific Ocean. Includes all perennial tributaries.	Scenery class "A" rating. Part of unique coastal primitive backpacking and camping area. Contains spawning and rearing habitat for federally listed threatened steelhead.
Squaw Creek	From its headwaters in sec. 21, T3S, R1W to private land boundary in the NW ¼ of section 8, T3S, R1W. Includes all perennial tributaries within this segment (not counting tributaries west of Little Moorehead Ridge.	Contains verified activity center for federally listed threatened northern spotted owl. Contains spawning and rearing habitat for federally listed threatened steelhead and Chinook salmon.
Telegraph Creek	From its headwaters in sec. 11, T5S, R1E to the Pacific Ocean. Includes all perennial tributaries.	Contains spawning and rearing habitat for the federally listed threatened steelhead.
Whale Gulch	From its headwaters just north of the Humboldt Co./Mendocino Co. line (unsurveyed area) to the Pacific Ocean. Includes all perennial tributaries.	Scenery class "A" rating. Part of unique coastal primitive backpacking and camping area.
Woods Creek	From its headwaters in sec. 15, T3S, R1W to its confluence with the Mattole River.	Contains verified activity center for federally listed threatened northern spotted owl. Contains <i>Umea longissima</i> (rare lichen) listed by C.A Lichen Society as a Survey and Manage Species.

SUITABILITY OF KING RANGE STREAMS

Twenty-eight river segments displayed in Table 1 were found to be eligible for inclusion into the NWSRS. Section 4(a) of the Wild and Scenic River Act mandates that all rivers found eligible as potential additions to the NWSRS be studied as to their suitability for such a designation. The purpose of this study is to provide information upon which the President of the United States can base his recommendation and Congress can make a decision. The study report describes the characteristics that do or do not make the stream segment a worthy addition to the system, the current status of land ownership and use in the area, the reasonably foreseeable potential uses of the land and water which would be enhanced, foreclosed, or curtailed if the area were included in the system, and several other factors. The suitability study is designed to answer these questions:

1. Should the river's free-flowing character, water quality, and ORVs be protected, or are one or more other uses important enough to warrant doing otherwise?
2. Will the river's free-flowing character, water quality, and ORVs be protected through designation? Is it the best method for protecting the river corridor? (In answering these questions, the benefits and impacts of wild and scenic river designation must be evaluated, and alternative protection methods considered.)
3. Is there a demonstrated commitment to protect the river by any nonfederal entities that may be partially responsible for implementing protective management?

Pursuant to Sections 4(a) and 5(c) of the Wild and Scenic Rivers Act, the following factors were considered and evaluated as a basis for the suitability determination for each river:

1. Characteristics that do or do not make the area a worthy addition to the NWSRS.
2. The current status of land ownership, minerals (surface and subsurface), and use in the area, including the amount of private land involved and associated or incompatible uses.
3. The reasonably foreseeable potential uses of the land and water that would be enhanced, foreclosed, or curtailed if the area were included in the NWSRS. Historical or existing rights which could be adversely affected.
4. The federal agency that will administer the area should it be added to the NWSRS.
5. The estimated cost to the United States of acquiring necessary lands and interests in lands and of administering the area should it be added to the NWSRS.
6. A determination of the degree to which the state or its political subdivisions might participate in the preservation and administration of the river should it be proposed for inclusion in the NWSRS.
7. An evaluation of the adequacy of local zoning and other land use controls in protecting the river's ORVs by preventing incompatible development.
8. Federal, public, state, local, or other interests in designation or non-designation of the river, including the extent to which the administration of the river, including the cost thereof, may be shared by state, local, or other agencies and individuals. Support or opposition to the designation.
9. The consistency of designation with other agency plans, programs, or policies and in meeting regional objectives.
10. The contribution to river system or basin integrity.

11. The ability of BLM to manage the river segments under designation, or ability to protect the river area other than Wild and Scenic designation.
12. The potential for water resources development.

1. Characteristics that Do or Do Not Make the River Segments Worthy Additions to the NWSRS

The stream segments in the KRNCA are located within the California Coast Range Physiographic Province. This province was used as a basis to determine if the study segments possess characteristics of at least regional significance that would make them worthy additions to the NWSRS. The Coast Range Physiographic Province contains the highest rainfall and density of streams in California. Also, many of these streams provide habitat for anadromous fisheries. There are currently five designated Wild and Scenic Rivers within the province. They include portions of the Smith River, Klamath River, Van Duzen River, the Main Stem and Middle Fork of the Eel River, and the entire South Fork Eel River. This amounts to a total of approximately 150 miles of designated Wild and Scenic River segments in the region. Many of the eligible river segments within the KRNCA have anadromous fisheries and outstandingly remarkable scenic and recreational values. However, when considered in the context of other streams in the region, which also contain these same values to varying levels, the BLM planning team found that some river segments provided average or low quality values in this regional context and therefore were not considered to be worthy additions to the system.

Eight river segments on seven streams in the KRNCA possess characteristics that make them worthy additions to the NWSRS. These include the Mattole River, Mill Creek, Honeydew Creek, South Fork Bear Creek (Segments A and B), Big Flat Creek, Big Creek, and Gitchell Creek, totaling 40.5 miles of river corridor on BLM public lands. These eight segments are high quality representatives of the outstandingly remarkable values when considered in the regional context.

Mattole River

The Mattole River is listed in the National Rivers Inventory and the 1988 Outstanding Rivers List published by American Rivers, Inc. The Mattole River estuary and associated beach is a focal point for recreation visitors to the Lost Coast Region and is one of the most popular sites in the KRNCA. The river carves a wide opening in the coastal mountains and offers a magnificent setting for a variety of recreational opportunities including camping, wildlife viewing and beach access. Visitors explore the estuary and beach and view the many bird species who seek refuge in the area's sheltered waters. Excellent spawning and rearing habitat exists for federally listed threatened steelhead and Coho and Chinook salmon. The estuary provides critical habitat for smolting salmon as they transition from the river to a salt water environment. The adjoining dune system contains the federally listed endangered *Layia carnosa* and other BLM sensitive rare plant species.

This significant fishery also historically attracted native Americans to the estuary, and the area contains numerous cultural sites and has been designated as an Area of Critical Environmental Concern (ACEC) to protect these values. The original human occupants of the Mattole River watershed were the Mattole and the Sinkyone. The Mattole occupied the lower watershed, including the estuary area, and the Sinkyone occupied the upper watershed. The first known Europeans to explore the area arrived in 1854, and friction between these new settlers and the native people was evident by 1858. In the span of eleven

years, the native cultures that occupied the area for hundreds or thousands of years were completely decimated. Archaeological sites are the only remaining evidence of this culture, making them especially significant.

Mill Creek

Much of the Mill Creek watershed was acquired by BLM in 1997 through a land exchange. The stream corridor contains a verified activity center for federally listed threatened northern spotted owl. Mill Creek is also an important cold water tributary to the Mattole River that provides critical spawning and rearing habitat for federally listed threatened steelhead and Coho salmon. The creek hosts the only known Coho population along the lower Mattole watershed. Much of the western part of the watershed contains a significant remnant stand of old-growth Douglas fir known locally as the “Mill Creek Forest.”

Honeydew Creek

Honeydew Creek is the fourth largest tributary to the Mattole River. The Northwest Forest Plan (NWFP) identifies the watershed as a part of the King Range Late-Successional Reserve and as a Tier-1 Key Watershed (USDA, USDI 1994). Much of the original old-growth forest in the Mattole watershed was heavily logged with the advent of tractor logging after World War II. In Honeydew Creek, however, the extreme topography and unstable slopes prevented logging in much of the upper watershed. Therefore, the upper watershed is one of the few major reaches of stream within the Mattole that has been relatively unaltered by humans. Public lands within the watershed are 93% forested. Most late successional forest stands occur near stream channels; Honeydew Creek contains the second largest acreage of this forest in the Mattole watershed (MRC 1989). Verified activity centers for the federally listed threatened northern spotted owl exist within the quarter-mile corridor of Honeydew Creek. The northern spotted owl requires habitat features provided by late-seral or old-growth forests, such as closed canopy, multiple-layer, open understory, coolness, high-humidity, and structural complexity, which are present in the Honeydew Creek watershed.

Honeydew Creek also contains anadromous fisheries, including the federally listed threatened steelhead and Coho and Chinook salmon. With regard to anadromous fish habitats, Honeydew Creek may be the most intact watershed in the Mattole River basin. The lower four miles of the main stem is rather unique in the mid-Mattole basin, contained in a broad U-shaped alluvial valley with a gradient of 2% or less. Almost all other stream channels in the watershed have a gradient of 5-15% or greater. Recent research from the Oregon Cascades and Oregon Coast Range shows that flatter reaches of streams, such as the lower main stem, tend to be the most productive areas for fish and other aquatic organisms (MRC 1995).

The river corridor has other outstandingly remarkable ecological values associated with Survey and Manage Species from the NWFP Record of Decision (ROD). Seven ROD –listed species were identified in the Honeydew Creek corridor that require protection “until they can be thoroughly surveyed and site-specific measures prescribed,” including a rare truffle, *Choriomyces venosus* (NWFP ROD 1997).

South Fork Bear Creek

The South Fork of Bear Creek is the largest watershed on the eastern slope of the King Range. The creek originates in the Chemise Mountain area, and flows northward between Paradise Ridge and the

King Crest. For the purpose of the evaluation, South Fork Bear Creek was divided into Segments A and B, separated by Shelter Cove Road, with Segment A to the south (upstream) and Segment B to the north (downstream). Segment A contains outstandingly remarkable cultural values while Segment B represents a majority of the spawning and/or nesting habitat for sensitive fish and wildlife species. Furthermore, Segment A has trails connecting from Nadelos and Wailaki campgrounds and Hidden Valley trailhead, which offer outstanding scenic, recreational, and interpretive opportunities on the east slope of the King Range.

While most of the South Fork of Bear Creek runs through very steep and narrow drainages, the terrain on the upper South Fork (Segment A) is relatively gentle, with some flood plain development, openings in the forest canopy, and large wet meadows in the Hidden Valley area. It contains significant cultural values including historic pioneer wagon trails and local Native American seasonal harvesting grounds, considered eligible for inclusion on the National Register of Historic Places. The original inhabitants in this watershed belonged to the Sinkyone tribe, the southernmost people to share the northwest salmon culture. Archaeologists have identified several cultural sites along the upper reaches of South Fork Bear Creek, from the headwaters area north to the vicinity near present-day Shelter Cove Road. These archaeological sites indicate long periods of continuous use.

South Fork Bear Creek, especially Segment B, provides excellent spawning and rearing habitat for the federally listed threatened steelhead and Coho and Chinook salmon. Chinook salmon spawn during the late fall, while coho salmon and steelhead spawn during the winter. Much of the watershed was logged in the mid-twentieth century, but restoration efforts and natural recovery over the last several decades have greatly improved fishery habitat. Bear Creek is the third largest tributary to the Mattole River and contributes significant flows to the main river during the late summer when water volume from the upper Mattole reaches a seasonal low. During the fall of 2002, Bear Creek continued to flow even after the main stem of the upper Mattole River ran dry.

Big Flat Creek

Big Flat Creek is located on the western slope of the King Range approximately 8.5 miles north of Shelter Cove. The entire watershed is within the King Range Wilderness Study Area (WSA). Big Flat Creek lies directly beneath the sentinel of 4,087 foot King Peak, carving its way through a deep boulder strewn canyon before flowing across a broad alluvial plain at the coast. The creek corridor and mouth make up the largest relatively flat area in the King Range backcountry and are a focal point for recreation visitors to the Lost Coast, who often camp at the creek mouth to enjoy the spectacular combination of creek, ocean, and mountains. Alluvial deposits from the creek also created a “point break” just offshore, making Big Flat a prominent surfing destination.

Rattlesnake Ridge Trail traverses the canyon of Big Flat Creek as it climbs from Big Flat to the King Crest. The forested fern-lined canyon trail offers a welcome contrast to the windswept Lost Coast Trail. It is the only trail in the King Range backcountry offering visitors an opportunity to explore a creek corridor.

Big Flat Creek contains anadromous fisheries, consisting primarily of federally listed threatened steelhead Trout. Preliminary information suggests that Big Flat Creek and other West Slope creeks of the King Range may support a subspecies of steelhead that have adapted to the area’s difficult habitat conditions,

i.e., more tolerant of shallow pools and high water temperatures. A biological assessment completed in 2000 showed that estimates of juvenile steelhead trout for Big Flat Creek and Big Creek (described below) were greater than all other west slope streams included in the study (Engle and Duffy 2000).

Big Creek

Big Creek is also located on the western slope of the King Range, approximately 11.5 miles north of Shelter Cove. In addition to high juvenile steelhead populations (see above), Big Creek has outstandingly remarkable scenic and recreational values and a popular campsite for backpackers along the Lost Coast Trail. Big Creek covers the second largest drainage area on the KRNCA west slope, and a large number of natural landslides have created a wide gravel channel in the lower watershed. Therefore, the creek corridor is easy to explore and offers hikers dramatic vistas of the King Crest, rising over 3,000 feet at the head of the canyon.

Gitchell Creek

Gitchell Creek is also located on the west slope, approximately 3.5 miles north of Shelter Cove. Gitchell Creek supports a steelhead fishery in its highly scenic corridor, with alternating deep pools and boulder strewn riffles bordered by dense alder stands. The mouth of the creek is a popular overnight camping destination, and the creek corridor offers off-trail hiking and exploring opportunities. Gitchell Creek contains no individual stand-out value when compared to other streams along the Lost Coast, but instead combines a number of outstandingly remarkable values to make it an exemplary example of west slope streams.

Additional River Segments

As illustrated in Table 1, twenty other river segments in the KRNCA meet minimum eligibility criteria for inclusion in the NWSRS. The streams were grouped by location (east vs. west slope) for descriptive purposes.

Most west slope streams have anadromous fisheries (except Buck Creek, Kinsey Creek, Whale Gulch, and Sea Lion Gulch). Based on their location on the dramatic coastal slope of the King Range, all have outstandingly remarkable scenic and recreational values. They have “Class A” scenery ratings and most are popular camping destinations along the Lost Coast Trail. In addition to these values, Cooskie Creek, Fourmile Creek, Randall Creek, Shipman Creek, Whale Gulch Creek, and Spanish Creek contain known prehistoric cultural sites. Finally, Horse Mountain Creek includes a verified activity center for the federally listed northern spotted owl. Although these are significant values that meet eligibility criteria, the study team has determined that the values are not at a level that would make these segments worthy additions to the NWSRS when viewed in the context of the KRNCA as a whole, or within the California Coastal Range Physiographic Province.

On the east slope of the King Range, Big and Little Finley creeks, the North Fork and main stem of Bear Creek, Noonung Creek, Squaw Creek, and Woods Creek were noted for the presence of anadromous fisheries. Indian Creek and Little Finley Creek also have known stream-related historical sites. Most of these watersheds have been substantially modified through past logging activities and the associated construction of roads, landings, and skid trails. The resulting landscapes would not broaden the

representation of key ecosystems within the system. Although the river segments found suitable have also been impacted from past logging, the impacts are not as extensive as has occurred in these other watersheds.

In summary, although these values meet the minimum eligibility criteria, when viewed in the context of the California Coastal Range Physiographic Province, the study team determined that these river segments were not of a level of quality to make them worthy additions to the NWSRS.

2. Status of Land Ownership and Current Use

Mattole River

Only 5.2% of the Mattole River crosses public land, with most of the remainder in private ownership. A small portion of the Mattole River passing through BLM land near the King Range Administrative Site was evaluated for Wild and Scenic River designation in the Arcata Resource Management Plan (1989). Therefore, evaluation for the King Range Wild and Scenic River suitability study focuses on the remaining public land portion, known as the Mattole River mouth and estuary. The length of the Mattole River mouth and estuary study segment is approximately 4.0 miles. On this segment, 84% of the river is in BLM ownership and 16% is owned by the California State Lands Commission, yet the entire segment is managed by BLM. The State Lands Commission has granted BLM the authority to administer “all that portion of the State-owned bed of the Mattole River and the Mattole River Estuary” by Permit No. PRC 5633.9. A local rancher maintains a road through BLM lands and a low-water crossing to access his private property on the north side of the estuary. This rancher also leases public lands within the corridor for grazing. These uses do not require improvements that would conflict with Wild and Scenic River Designation. In 1981, the BLM King Range Extension Plan designated the Mattole River mouth and estuary an Area of Critical Environmental Concern (ACEC) for the protection of the estuary, archaeological sites and native sand dune ecosystems on Mattole Beach. This ACEC designation complements Wild and Scenic River designation.

The area just south of the estuary is one of the most popular recreation sites in the KRNCA, serving as a coastal/estuary access point, campground, and trailhead. This use is compatible with designation.

Mill Creek

Much of the Mill Creek watershed, including the entire length of the study segment, was purchased by the BLM in 1997. Protection of this cold water tributary was a primary purpose for acquisition of the Mill Creek parcel and was supported by the State of California and surrounding property owners. The watershed is proposed for ACEC designation in this Plan. Public use is low for dispersed day-use recreation activities. All present and anticipated uses are compatible with designation.

Honeydew Creek

Honeydew Creek drains the eastern slope of King Peak and exits the KRNCA before crossing Wilder Ridge Road. It then re-enters BLM public land for a short segment near the Honeydew Creek Campground. Approximately 82.5% of the river segment under evaluation is on BLM public land. The remaining 2.5 miles crosses private ranch lands with a couple of scattered residences. Minor use of the creek for livestock watering occurs on private lands on the lower main stem and East Fork. Current

grazing is limited to small-scale operations on individual ownerships; there are no active grazing permits on public lands in the watershed. One campground located on the lower main stem of Honeydew Creek receives moderate use for camping, picnicking, and swimming. No anticipated public or private land uses within the corridor would conflict with Wild and Scenic River designation.

Other East Slope Creeks

All east slope streams determined to be eligible for Wild and Scenic River designation have river segments crossing private lands except Nooning Creek. Those located 60% or more on BLM public land include Big Finley Creek, Woods Creek, Whale Gulch, and North Fork Bear Creek. Those located less than 60% on BLM public land are Little Finley Creek, Indian Creek, Squaw Creek, and Bear Creek's main stem. Private lands in the creek corridors are used for ranching and rural low-density residential use. No anticipated uses on private or public lands would conflict with Wild and Scenic River designation.

Bear Creek

The South Fork of Bear Creek is located mostly within the KRNCA boundary, although 49% (1.3 miles) of Segment A and 18% (1.7 miles) of Segment B pass through private property. Two existing power line rights-of-way cross BLM lands along Shelter Cove Road and Chemise Mountain Road. Also, Chemise Mountain Road parallels Segment A, and provides access to two BLM campgrounds (Wailaki and Nadelos). This combination of development has resulted in a different classification (Recreational) for Segment A, but is not incompatible with designation. There are no current uses on private lands in the corridor that are incompatible with Wild and Scenic River designation for both segments.

Other West Slope Creeks

Big Creek, Big Flat Creek, Buck Creek, Horse Mountain Creek, Kinsey Creek, Oat Creek, Randall Creek, Sea Lion Gulch, Spanish Creek, and Gitchell Creek are almost completely under public ownership, with the exception of small private parcels in the corridor at Big Flat Creek and Fourmile Creek. Currently, all of these river segments are protected under the BLM's Interim Management Policy for Lands under Wilderness Review, pending a final decision by Congress regarding Wilderness designation. No proposed land uses would conflict with Wild and Scenic River management.

Sixty-eight percent of Fourmile Creek is located on BLM public land. The remainder of the watershed is on lands used for low density residential use or ranching. This use would be compatible with designation.

Less than 14% of Humboldt Creek and 17% of Telegraph Creek are located on public lands. The remainders of these corridors are in the Shelter Cove Subdivision, zoned for residential development. BLM has authorized one right-of-way for a water facility and pipeline in the Telegraph Creek corridor for Shelter Cove. The community uses the creek as its main water supply. In the long term, a large number of residences could be constructed in these watersheds. This level of development would likely be incompatible with Wild and Scenic River designation. In addition, only 16% of Cooskie Creek is located on public land. BLM Manual 8351.33A(2) entitled "Wild and Scenic Rivers – Policy and Program Direction for Identification, Evaluation and Management" states: "In situations where there is limited public land (shoreline and adjacent land) administered by the BLM within an identified river study area, it

may be difficult to ensure those identified outstandingly remarkable values could be properly maintained and afforded adequate management protection over time. Accordingly, for those situations where the BLM is unable to protect or maintain any identified outstandingly remarkable values, or through other mechanisms (existing or potential), river segments may be determined suitable only if the entity with land use planning responsibility supports the finding and commits to assisting the BLM in protecting the identified river values. An alternative method to consider these segments is for state, local governments or private citizens to initiate efforts under section 2(a)(ii), or a joint study under section 5C of the Wild and Scenic Rivers Act.” Humboldt County has land use planning responsibility for the private lands on these segments. The BLM has not approached the county regarding their support for Wild and Scenic River designation of these three segments, since the study team determined that they are not worthy additions to the system.

3. Potential Uses of the Land to be Enhanced or Curtailed by Designation/ Historical or Existing Rights That Could Be Adversely Affected, including Water Resources Projects

Public lands in the King Range are either Administratively Withdrawn or designated as a Late-Successional Reserve (LSR) in the Northwest Forest Plan ROD (1994). This land allocation conveys a specific set of stipulations regarding management and protection of old-growth forest dependent wildlife and fishery habitats. Also, all of the corridors include Riparian Reserve designations under this same plan. All west slope streams (except Telegraph and Humboldt Creek), and Honeydew Creek are located in the King Range WSA, which is being managed to protect wilderness character pending consideration for wilderness designation by Congress. All of these management designations would be enhanced by Wild and Scenic River designation.

Mattole River

The Mattole River mouth and estuary is a popular recreation site for local residents and visitors to the King Range. The Mattole River Campground is BLM’s only developed campsite on the KRNCA coastline and is located within the ¼ mile river corridor under evaluation. BLM has proposed improving this campground in the future to protect resource values and enhance the quality of the visitor experience. This development will be modest and would complement Wild and Scenic River designation by enhancing opportunities for visitors to enjoy the river corridor.

Locally, the gravel bar surrounding the estuary is treated as a commons and is used by local residents as a source for personal-use gravel or sand, firewood cutting, and target practice. In recent years, the gravel bar has also become a gathering place for overflow campers from the developed campground. This RMP includes goals to manage uses in the estuary to protect the area’s significant ecological values, including limiting vehicle use to designated corridors. Wild and Scenic River designation would be compatible with these management goals.

Fishing was historically a major use of the estuary; fishermen came to the area annually during salmon runs to fish at the first riffles. However, use declined with the corresponding decline in populations of salmon. In 1991 the State Fish and Game Commission closed the river to fish harvesting to protect salmonids, in response to requests from the Mattole Watershed Alliance (NCRWQCB 2002). Currently,

catch-and-release fishing for steelhead trout is still allowed (as of 2003) in the upstream portion of the study segment, and drift-boat fishermen use the gravel bar as a takeout point. Fishing use is carefully managed by the California Department of Fish and Game and the National Marine Fishery Service to protect remaining runs of salmonids.

The Mattole Salmon Group and Mattole Restoration Council have completed projects to anchor root-wads and driftwood logs in the estuary in an effort to increase habitat for salmonids. Placement of further habitat improvement structures in the river would have to undergo an evaluation to ensure that they do not negatively impact the free-flowing character of the river (Section 7). However, these projects would probably be minimally affected by designation since their intent is to enhance the outstandingly remarkable fishery values.

The beneficial uses and water quality objectives for the Mattole River are contained in the *Water Quality Control Plan for the North Coast Region* (Basin Plan) as amended in 1996 (NCRWQCB). These beneficial uses include:

1. Municipal and Domestic Supply (MUN)
2. Agricultural Supply (AGR)
3. Industrial Service Supply (IND)
4. Water Contact Recreation (REC-1)
5. Non-Contact Water Recreation (REC-2)
6. Commercial or Sport Fishing (COMM)
7. Cold Freshwater Habitat (COLD)
8. Estuarine Habitat (EST)
9. Wildlife Habitat (WILD)
10. Migration of Aquatic Organisms (MIGR)
11. Spawning, Reproduction, and/or Early Development (SPWN)

In addition, the beneficial use of water related to rare, threatened, or endangered species (RARE), has been proposed for this basin, because federally-listed Coho and Chinook salmon and steelhead trout are found in the watershed (NCRWQCB 2001a). Also, aquaculture (AQUA) in the watershed is listed in the Basin Plan (NCRWQCB 1996) as a potential beneficial use.

There is a great deal of local concern over in-stream flows and potential water development proposals to export river water out of the Mattole basin. Part of this concern was fueled by a private developer's proposal to pump water from North Coast rivers into large polymer bags and haul them by barge to southern California. No specific proposal was made for such an operation in the Mattole watershed. During recent years, the upper river has dried up completely during the late summer, threatening survival of salmon and steelhead fry. Local restoration groups are encouraging water users to store water for dry season use and not draw upon the limited river flows. Wild and Scenic River designation would not impact existing water rights on the Mattole or other streams in the KRNCA. However, designation would establish a federal water right for the designated segments which could limit future proposals to remove water from the river, especially if these uses impacted outstandingly remarkable values such as salmonid populations.

Bear Creek

Foreseeable uses on public lands in the Bear Creek watershed would not be impacted by designation. Campgrounds in the corridor have all been recently reconstructed, with future plans limited to development of small trailhead parking areas and non-motorized trails. Designation would establish a federal reserve water right, which would not affect existing private land uses/water rights but could affect future stream diversions, especially during the low-flow summer period. However, protection of flow levels would be required under the Endangered Species Act, with or without Wild and Scenic River Designation.

Mill Creek

Mill Creek was evaluated for potential uses of the land as a requirement for the acquisition agreement in 1997. Identified uses within the Mill Creek corridor include overnight camping and multiple use trails for day use and/or accessing the remainder of the King Range backcountry. None of these uses will be impacted or curtailed by designation, and recreational opportunities could be enhanced.

Honeydew Creek

Honeydew Creek includes one recreational development (Honeydew Creek Campground). This site would not be affected by Wild and Scenic River designation.

All other east slope streams with river segments crossing private lands have similar potential uses for rural residential and ranching purposes that would not be curtailed by Wild and Scenic River designation.

West Slope Creeks

Eligible streams on the west slope, including Fourmile Creek, Sea Lion Gulch, Big Creek, Big Flat Creek, Whale Gulch, Gitchell Creek, and Shipman Creek, have similar potential uses due to their location inside the King Range WSA that would be enhanced by Wild and Scenic River designation. Primarily, these river segments' potential uses are limited to recreational purposes for backcountry visitors, but may include scientific studies for educational purposes and/or recreation research, which would be enhanced by Wild and Scenic River designation.

Humboldt Creek and Telegraph Creek are both located in the Shelter Cove subdivision. Only a small percentage of land along both of these segments is administered by the BLM. Shelter Cove is expected to continue growing at a moderate rate, and over the long-term a large number of residences will likely be developed within these corridors. This development could be curtailed by designation.

Diversions of additional water from any of the streams during the summer low-flow period could impact outstandingly remarkable values. Wild and Scenic River designation would not impact current water rights, but could affect future diversions from the streams.

Alterations to existing water withdrawal facilities may be approved under Section 7 of the Wild and Scenic Rivers Act, as long as there is no direct adverse effect to the values for which the river was designated.

4. Federal Agency that will Administer KRNCA Wild and Scenic River Segments

The U.S. Department of the Interior Bureau of Land Management (BLM) would administer all river segments under evaluation should they be included in the NWSRS.

5. Estimated Cost of Acquisition and Administration

There would be no need to acquire additional lands for most KRNCA river segments to be included in the National Wild and Scenic River System. The exception would be Telegraph and Humboldt Creeks; a large number of residential lots would need to be acquired (or placed under conservation easements) in these stream corridors to maintain their character. There would also be a modest cost associated with developing management plan(s) for all designated streams, and coordinating with adjacent private landowners to ensure that their activities would not cause offsite (downstream or downslope) impacts that could potentially affect river values.

6. State or local political subdivision participation in river preservation and management

During the initial scoping period for this Plan, no government agencies commented or expressed interest specifically in wild and scenic river designation. However, numerous state and federal agencies have committed funding and effort to protecting river related values on the study segments. For example, the California Coastal Conservancy and Wildlife Conservation Board have funded land acquisitions to protect Mill Creek and the Mattole River. The U.S. Fish and Wildlife Service (FWS), California Department of Fish and Game (CDFG), and BLM have existing agreements to support salmon recovery in the Mattole River. The North Coast Regional Water Board has prepared a Technical Support Document (TSD) that addresses sources of sediment and temperature impairments, loading capacities, and load allocations necessary to restore sediment and temperature conditions supportive of beneficial uses related to the cold water fishery in the Mattole River watershed. Humboldt County has cooperated with the BLM in storm-proofing county roads to reduce sedimentation of area streams. In summary, there is already a strong established level of cooperation among federal, state, and local agencies to restore and protect streams in the region.

7. Local Zoning and Land Use Planning Adequacy in protecting the river values

Most portions of the study segments are located on federal lands administered by the BLM and local zoning would not apply. Where the segments cross private lands, most stretches are zoned for grazing/timber management with low density residential use. These uses at the scales foreseen within the study segments would be compatible with Wild and Scenic River designation. The private lands encompassing most of the Telegraph Creek and Humboldt Creek segments are zoned for residential development. As the community of Shelter Cove grows, a large percentage of the land base in these watersheds could be developed for residences at a high density level. Wild and Scenic River designation would not be compatible with this development.

8. Federal, public, state, local or other interests in designation/non-designation of the river. Support or Opposition to the Designation.

A description of other federal, state, and local agency involvement and interest in river management is contained under Item 6 above. Residents of the Mattole Valley and southern Humboldt County have a long history of active interest in river conservation (House 1999). During the scoping period for this plan, several local residents expressed concerns specific to the Mattole River estuary and the potential impacts of any projects to export water from the area. These comments were in response to proposals by a private water developer to construct a system to export water from the mouths of north coast rivers to Southern California. Wild and Scenic River designation was supported as one avenue to stop this potential development. No other comments specific to Wild and Scenic River designation were received during the scoping period. However, many comments were received regarding protection of river related values including water quality/quantity, anadromous fisheries, and scenic values.

A number of grass roots organizations in the region directly support watershed management and restoration efforts that protect and enhance the outstandingly remarkable values of many of the study segments. The Mill Creek Watershed Conservancy is a consortium of local residents from Petrolia and the surrounding region that assisted BLM in acquiring the Mill Creek parcel in 1997, and continues to lead efforts to restore the health of the watershed. The Mattole Salmon Group has also done considerable salmonid enhancement and watershed rehabilitation work in the Mattole Watershed. The group initiated a Chinook salmon hatchbox program in 1982, and installed a Coho hatchbox facility in 1987 on the South Fork of Bear Creek. The Mattole Restoration Council oversees watershed restoration projects on public and private lands throughout the Mattole Valley. Other organizations involved with watershed management include Sanctuary Forest and the Middle Mattole Conservancy. In summary, there is exceptionally strong local support in the area for river conservation.

9. The consistency of designation with other agency plans, programs or policies and in meeting regional objectives.

Wild and Scenic River designation for most of the study segments would be consistent with other agency plans and programs for the region. All of the study segments except Telegraph and Humboldt Creek flow through public lands designated as a Late Successional Reserve or administratively withdrawn under the Northwest Forest Plan. The segments are also classified as Riparian Reserves under the Aquatic Conservation Strategy of this regional plan for public lands in the Pacific Northwest. These designations are intended to conserve in-tact forest and aquatic ecosystems and are compatible with Wild and Scenic River designation. Wild and Scenic designation of Humboldt and Telegraph Creek would not be compatible with local zoning or land use management plans.

10. Contribution to River System or Basin Integrity

The Mattole River estuary has a seasonal cycle, open to the ocean from fall to late spring, and closed by a sand berm that develops during the summer and early fall. When the river mouth is closed by the berm, a small lagoon of approximately seven acres is formed. This variable wetland is rich in wildlife, and the lagoon serves a critical function in the life cycle of the king salmon. The limits to anadromous fisheries populations are not clearly understood, but are related to water temperature, diet, and predation, which are, in turn, related to the availability of riparian habitat. In gross terms, all ecological problems in the

estuary are related to its function as an endpoint of in-river storage of sediment. Any management action that reduces the input of sediment into the river system will benefit the Mattole River estuary and lagoon. Furthermore, because native Mattole king salmon populations are diminished to a point where their viability remains a question, Wild and Scenic River designation of the river segment under evaluation will contribute significantly to the integrity of the Mattole River system as a whole.

Bear Creek is a 13,820 acre tributary to the Mattole River. Along with adjacent Honeydew Creek, Bear Creek is comprised of predominately public land in the Mattole basin. These are also the least impacted (relative to other sub-basins in the Mattole watersheds) by historic and on-going land use practices. Within the Mattole basin they are the tributaries best suited as functional refugia for anadromous fisheries, as well as for high restoration potential. The restoration impetus of Honeydew Creek and Bear Creek in particular contributes to the current focus on ecosystem management through watershed restoration. It provides a foothold for public/private cooperation and a starting point from which to assess and prioritize watershed conditions, and to enhance the integrity of both river systems and the entire Mattole River basin.

The upper two-thirds of the Honeydew Creek watershed have been under public management since 1970. It has been managed by BLM as part of Zone 7 of the KRNCA with the primary use of wildlife habitat conservation. The second largest stand of old-growth forest in the entire Mattole River basin protects the headwaters of Honeydew Creek. Because of these relatively undisturbed headwaters areas, overall habitat conditions are recovering slightly quicker than other Mattole watersheds. Considering the size of the basin, relatively few active sources of sedimentation have been identified (MRC 1989). In summary, Honeydew Creek is a major component of the Mattole watershed and contributes greatly to its integrity.

Part of the Mill Creek watershed was logged prior to 1975, with the exception of 210 acres which now constitute the largest grove of old-growth habitat within the lower Mattole watershed (MRC 1989). This grove, located on the west side of a middle reach of the creek, accounts for the relative stability of the lower reaches of the creek, which is the coldest and cleanest tributary in the lower river, contributing significantly to the river environment and integrity.

Other study segments in the Mattole watershed contribute in varying degrees to the integrity of the watershed, but not at a level of significance comparable to the above described segments.

All of the west slope streams are individual distinct watersheds flowing directly into the Pacific. Therefore they are complete systems in and of themselves and do not contribute to the integrity of any larger river system.

11. Management or Protection other than Wild and Scenic River Designation

In the case of river segments that are found not suitable for designation, BLM will continue to manage these streams as integral ecosystem components of the King Range. Management objectives in the King Range RMP call for continued emphasis on restoration of anadromous fisheries, riparian ecosystems, late successional forests and other components of healthy watersheds in Mattole River tributaries. West slope streams (with the exception of Telegraph and Humboldt Creeks) are all located in the King Range WSA.

The preferred alternative for this plan also calls for the BLM to file on water rights to protect the aquatic habitat of KRNCA streams. Also, most water resource projects would be incompatible with the King Range Act, Northwest Forest Plan, and the BLM's Interim Management Policy for Lands under Wilderness Review. For example, hydropower facilities, dredging, diversion and channelization, irrigation, and flood control measures are inconsistent with the vision of the King Range, and would therefore not be permitted to the extent of BLM's authority.

ANALYSIS OF ALTERNATIVES

In accordance with NEPA and the Wild and Scenic River Act of 1968, BLM used an interdisciplinary planning team to draft an array of alternatives for Wild and Scenic Rivers. These alternatives ranged from proposing that none of the eligible river segments be found suitable and recommended for designation under Alternative A, eight river segments found suitable and recommended for designation under Alternative B, fifteen river segments found suitable and recommended for designation under Alternative C, and all twenty-eight eligible river segments to be found suitable and recommended for designation under Alternative D (Preferred). Specifically:

- Alternative A (No Action): No segments recommended
- Alternative B: Big Creek, Big Flat Creek, Gitchell Creek, South Fork Bear Creek (Segments A and B), Honeydew Creek, Mill Creek, and Mattole Estuary recommended.
- Alternative C: Same as B with the addition of Shipman Creek, Buck Creek, Randall Creek, Horse Mountain Creek, Kinsey Creek, Oat Creek, and Spanish Creek.
- Alternative D (Preferred Alternative): All study segments recommended.

The impacts of these alternatives are analyzed in Chapter IV of the plan.

RECOMMENDATION

It is recommended that the following river segments, as defined in Table 2, be designated as components to the NWSRS: Mattole River Estuary, Mill Creek, Honeydew Creek, Segments A and B of the South Fork of Bear Creek, Big Creek, Big Flat Creek, , and Gitchell Creek. The remaining study segments were found to be unsuitable.

PROTECTIVE MANAGEMENT

All river segments found to be eligible for inclusion in the NWSRS are placed under protective management by the BLM. Subject to valid existing rights, the BLM is required to protect the free-flowing characteristics and outstandingly remarkable values in the stream corridors. The BLM must also protect the corridor from modifications that would impact the tentative river classification (i.e., change the classification potential from Wild to Scenic, or from Scenic to Recreational). These management restrictions apply only to public lands. Once suitability is determined and the Record of Decision (ROD) for the RMP signed, protective management continues only for those segments found suitable for designation. This protective management remains in effect until Congress makes a final decision regarding designation, or the RMP is amended.

Rationale

Many of the river segments under evaluation have similar land tenure status, historical uses, and potential or existing uses. Therefore, the primary distinction for the KRNCA streams found suitable for designation by the planning team was the exceptional combination of outstandingly remarkable values that make them worthy additions to the NWSRS. In selecting the eight segments found suitable and recommended for designation in Alternative D, the planning team determined these streams represent the “crown jewels” of the King Range with their wild character, scenic beauty, outstanding recreation opportunities, quality anadromous fisheries, and/or significant cultural values.

The Mattole River mouth and estuary, Mill Creek, Honeydew Creek, South Fork Bear Creek, Big Creek, Big Flat Creek, and Gitchell Creek would make worthy additions to the NWSRS for the following reasons:

- Magnificent scenery, extensive recreational opportunities for day use, camping, and access to backcountry trails in the KRNCA.
- Excellent spawning and rearing habitat for federally listed salmonids. The Mattole Estuary also contains habitat for the federally listed endangered *Layia Carnosa*.
- The presence of these quality anadromous fisheries is also related to the significant cultural sites found at the Mattole River, South Fork Bear Creek, and several coastal streams.
- Designation would preserve and protect the free-flowing character, water quality, and outstandingly remarkable values of these exceptional river segments.
- A commitment has been demonstrated by the local community and non-federal entities to work collaboratively with BLM in implementing protective management of the resource values in these streams.
- No land ownership or potential uses would be in conflict or curtailed if these river segments were designated.
- No costs would be involved in acquiring necessary lands and interest in lands, as the BLM already manages the majority of land in the suitable corridors.

Of the river segments found non-suitable, the primary factor was the conclusion that they would not make worthy additions to the system. Although the segments have outstandingly remarkable values that meet eligibility criteria, the study team has determined that the values are not at a level that would make these segments worthy additions to the NWSRS when viewed in the context of the KRNCA as a whole, or within the California Coastal Range Physiographic Province.

Many of these watersheds have been substantially modified through past logging activities and the associated construction of roads, landings, and skid trails. The resulting landscapes would not broaden the representation of key ecosystems within the system. Although several of the segments found suitable have also been impacted from past logging, the impacts are not as extensive as has occurred in the non-suitable watersheds. A second factor contributed to the non-suitable recommendation for Humboldt and Telegraph Creeks. Although these watersheds are currently somewhat undeveloped, local (County) and

regional (Coastal Zone) planning calls for these stream corridors to be developed as residential areas within the Shelter Cove subdivision. This high level of development will change the character of the watersheds and be incompatible with Wild and Scenic River designation. Fisheries and other watershed values for all streams including the non-suitable segments will be afforded protection through state and local land use plans, the Endangered Species Act, and the Northwest Forest Plan.

APPENDIX D

RIPARIAN/AQUATIC STANDARD AND GUIDELINES

DESCRIPTION – RIPARIAN RESERVE WIDTHS

Riparian Reserves are specified for five categories of streams or waterbodies as follows:

- **Fish-bearing streams** - Riparian Reserves consist of the stream and the area on each side of the stream extending from the edges of the active stream channel to the top of the inner gorge, or to the outer edges of the 100-year floodplain, or to the outer edges of riparian vegetation, or to a distance equal to the height of two site-potential trees, or 300 feet slope distance (600 feet total, including both sides of the stream channel), whichever is greatest.
- **Permanently flowing nonfish-bearing streams** - Riparian Reserves consist of the stream and the area on each side of the stream extending from the edges of the active stream channel to the top of the inner gorge, or to the outer edges of the 100-year floodplain, or to the outer edges of riparian vegetation, or to a distance equal to the height of one site-potential tree, or 150 feet slope distance (300 feet total, including both sides of the stream channel), whichever is greatest.
- **Constructed ponds and reservoirs, and wetlands greater than 1 acre** - Riparian Reserves consist of the body of water or wetland and: the area to the outer edges of the riparian vegetation, or to the extent of seasonally saturated soil, or the extent of unstable and potentially unstable areas, or to a distance equal to the height of one site-potential tree, or 150 feet slope distance from the edge of the wetland greater than 1 acre or the maximum pool elevation of constructed ponds and reservoirs, whichever is greatest.
- **Lakes and natural ponds** - Riparian Reserves consist of the body of water and: the area to the outer edges of the riparian vegetation, or to the extent of seasonally saturated soil, or to the extent of unstable and potentially unstable areas, or to a distance equal to the height of two site-potential trees, or 300 feet slope distance, whichever is greatest.
- **Seasonally flowing or intermittent streams, wetlands less than 1 acre, and unstable and potentially unstable areas** - This category applies to features with high variability in size and site-specific characteristics. At a minimum, the Riparian Reserves must include:
 - The extent of unstable and potentially unstable areas (including earthflows),
 - The stream channel and extend to the top of the inner gorge,
 - The stream channel or wetland and the area from the edges of the stream channel or wetland to the outer edges of the riparian vegetation, and
 - Extension from the edges of the stream channel to a distance equal to the height of one site-potential tree, or 100 feet slope distance, whichever is greatest.

A site-potential tree height is the average maximum height of the tallest dominant trees (200 years or older) for a given site class.

Intermittent streams are defined as any nonpermanent flowing drainage feature having a definable channel and evidence of annual scour or deposition. This includes what are sometimes referred to as ephemeral streams if they meet these two physical criteria.

TIMBER MANAGEMENT

TM-1. Prohibit timber harvest, including fuelwood cutting, in Riparian Reserves, except under the following conditions:

- a. Where catastrophic events such as fire, flooding, wind, or insect damage result in degraded riparian conditions, allow forest health treatments and fuelwood cutting if required to attain Fisheries/Watershed Objectives objectives.
- b. Allow forest health treatments (such as thinning over stocked and/or diseased stands) only when watershed analysis determines that present and future coarse woody debris needs are met and other Fisheries/Watershed Objectives objectives are not adversely affected.
- c. Apply silvicultural practices for Riparian Reserves to control stocking, reestablish and manage stands, and acquire desired vegetation characteristics needed to attain Fisheries/Watershed Objectives objectives. For example, in the Mattole Basin consider riparian silviculture treatments to reduce hardwood canopy and to replant conifers to accelerate future large woody debris recruitment potential.

ROADS MANAGEMENT

RF-1. BLM will cooperate with other entities to achieve consistency in road design, operation, and maintenance necessary to attain Fisheries/Watershed Objectives objectives.

RF-2. For each existing or planned road, meet Fisheries/Watershed Objectives objectives by:

- a. New roads are not allowed on west slope of KRNCA unless required for emergency purposes such as fire.
- b. completing watershed analyses (including appropriate geotechnical analyses) prior to construction of new roads or landings in Riparian Reserves.
- c. preparing road-specific maintenance plans for all roads in the KRNCA to minimize adverse impacts from roads.
- d. All above activities will not occur during wet weather. BLM will inspect road conditions prior to initiating any routine road maintenance activity.
- e. Heavy equipment operations will use all feasible techniques to prevent any sediment from entering a drainage system during operations. For example, operators will take precautions when

operating near drainages to keep surface materials out of the stream channel. Only operators who are informed of all applicable Standards and Guides and conditions of operation will be permitted to commence work. A BLM project inspector, or designee, will be onsite to insure proper procedures are followed.

- f. Heavy equipment will be inspected daily by the BLM project inspector, or designee, to check for leaks. Equipment that may leak lubricants or fuels into drainages will not be used until leaks are repaired. Fuel trucks (if used) and/or re-fueling will be done outside of Riparian Reserves and stream crossings.
- g. Vegetation trimming or removal conducted in Riparian Reserves will be completed in such a fashion as to not retard attainment of Fisheries/Watershed Objectives objectives. Specifically: 1) Downed woody material in Riparian Reserves will not be removed and will be moved only to the extent necessary to provide for safe road use. 2) Conifers exceeding three inches diameter will not be cut from Riparian Reserves unless it is absolutely necessary for safe use of the road segment. If a conifer exceeding three inches diameter must be cut, it may not be moved from the Riparian Reserve or stream corridor without review from a BLM fishery biologist or designee.
- h. Water drafting will be conducted only at sites approved by BLM staff and will follow NMFS guidelines.
- i. Mulching will be used, as necessary, to minimize sediment delivery from disturbed ground outside the active stream channel.

RF-3. Determine the influence of each road on the Fisheries/Watershed Objectives objectives through watershed analysis. BLM has completed several watershed analyses and has coordinated with MRC to inventory roads and to address road problems. Although much of the road work (decommissioning, closing, stabilizing) has been done, this program will continue and will be applied to other watersheds (untreated watersheds with smaller public land holdings and a few roads on the west side of the KRNCA) within the KRNCA. Meet Fisheries/Watershed Objectives objectives by:

- a. reconstructing roads and associated drainage features that pose a substantial risk.
- b. prioritizing reconstruction based on current and potential impact to riparian resources and the ecological value of the riparian resources affected.
- c. closing and stabilizing, or obliterating and stabilizing roads based on the ongoing and potential effects to Fisheries/Watershed Objectives objectives and considering short-term and long-term transportation needs and required access through BLM lands to private inholdings.

RF-4. New culverts, bridges and other stream crossings shall be constructed, and existing culverts, bridges and other stream crossings determined to pose a substantial risk to riparian conditions will be improved, to accommodate at least the 100-year flood, including associated bedload and debris. Priority for upgrading will be based on the potential impact and the ecological value of the riparian resources

affected. Crossings will be constructed and maintained to prevent diversion of streamflow out of the channel and down the road in the event of crossing failure.

RF-5. Minimize sediment delivery to streams from roads. Outsloping of the roadway surface is preferred, except in cases where outsloping would increase sediment delivery to streams or where outsloping is unfeasible or unsafe. Route road drainage away from potentially unstable channels, fills, and hillslopes.

RF-6. Provide and maintain fish passage at all road crossings of existing and potential fish-bearing streams.

RF-7. Develop and implement a Transportation Management Plan that will meet the Fisheries/Watershed Objectives objectives. As a minimum, this plan shall include provisions for the following activities:

- a. inspections and maintenance during storm events.
- b. inspections and maintenance after storm events.
- c. road operation and maintenance, giving high priority to identifying and correcting road drainage problems that contribute to degrading riparian resources.
- d. traffic regulation during wet periods to prevent damage to riparian resources.
- e. establish the purpose of each road by developing the Road Management Objective.

GRAZING MANAGEMENT

GM-1. Adjust grazing practices to eliminate impacts that retard or prevent attainment of Fisheries/Watershed Objectives objectives. If adjusting practices is not effective, eliminate grazing. BLM has completed consultation with regulatory agencies on their grazing allotments in the KRNCA and grazing practices have already been adjusted. If conditions change, such as a severe drought, further adjustments may be required in the future on order to meet Fisheries/Watershed Objectives objectives.

GM-2. No new livestock handling and/or management facilities will be located inside of Riparian Reserves. For existing livestock handling facilities inside the Riparian Reserve, ensure that Fisheries/Watershed Objectives objectives are met. Where these objectives cannot be met, require relocation or removal of such facilities.

GM-3. Limit livestock trailing, bedding, watering, loading, and other handling efforts to those areas and times that will ensure Fisheries/Watershed Objectives objectives are met.

RECREATION MANAGEMENT

RM-1. New recreational facilities within Riparian Reserves, including trails and dispersed sites, should be designed to complement Fisheries/Watershed objectives. Construction of these facilities should not prevent future attainment of these objectives. For existing recreation facilities within Riparian Reserves, evaluate and mitigate impact to ensure that these do not prevent, and to the extent practicable contribute to, attainment of Fisheries/Watershed Objectives objectives.

RM-2. Adjust dispersed and developed recreation practices that retard or prevent attainment of Fisheries/Watershed Objectives objectives. Where adjustment measures such as education, use limitations, traffic control devices, increased maintenance, relocation of facilities, and/or specific site closures are not effective, eliminate the practice or occupancy. As use increases, human waste may impact water quality in west slope streams requiring further education to redirect use. Wailaki, Nadelos and Honeydew Creek campgrounds are in Riparian Reserves and use needs to be focused on primary trails to protect streambanks from dispersed foot traffic.

RM-3. Wild and Scenic Rivers and Wilderness management plans will address attainment of Fisheries/Watershed Objectives objectives.

MINERALS MANAGEMENT

MM-1. Require a reclamation plan, approved Plan of Operations, and reclamation bond for all minerals operations that include Riparian Reserves. Such plans and bonds must address the costs of removing facilities, equipment, and materials; recontouring disturbed areas to near pre-mining topography; isolating and neutralizing or removing toxic or potentially toxic materials; salvage and replacement of topsoil; and seedbed preparation and revegetation to meet Fisheries/Watershed Objectives objectives.

MM-2. Locate structures, support facilities, and roads outside Riparian Reserves. Where no alternative to siting facilities in Riparian Reserves exists, locate them in a way compatible with Fisheries/Watershed Objectives objectives. Road construction will be kept to the minimum necessary for the approved mineral activity. Such roads will be constructed and maintained to meet roads management standards and to minimize damage to resources in the Riparian Reserve. When a road is no longer required for mineral or land management activities, it will be closed, obliterated, and stabilized.

MM-3. Prohibit solid and sanitary waste facilities in Riparian Reserves. If no alternative to locating mine waste (waste rock, spent ore, tailings) facilities in Riparian Reserves exists, and releases can be prevented, and stability can be ensured, then:

- a. analyze the waste material using the best conventional sampling methods and analytic techniques to determine its chemical and physical stability characteristics.
- b. locate and design the waste facilities using best conventional techniques to ensure mass stability and prevent the release of acid or toxic materials. If the best conventional technology is not sufficient to prevent such releases and ensure stability over the long term, prohibit such facilities in Riparian Reserves.

- c. monitor waste and waste facilities after operations to ensure chemical and physical stability and to meet Fisheries/Watershed Objectives objectives.
- d. reclaim waste facilities after operations to ensure chemical and physical stability and to meet Fisheries/Watershed Objectives objectives.
- e. require reclamation bonds adequate to ensure long-term chemical and physical stability of mine waste facilities.

MM-4. For leasable minerals, prohibit surface occupancy within Riparian Reserves for oil, gas, and geothermal exploration and development activities where leases do not already exist. Where possible, adjust the operating plans of existing contracts to eliminate impacts that retard or prevent the attainment of Fisheries/Watershed Objectives objectives.

MM-5. Salable mineral activities such as sand and gravel mining and extraction within Riparian Reserves will occur only if Fisheries/Watershed Objectives objectives can be met.

MM-6. Include inspection and monitoring requirements in mineral plans, leases or permits. Evaluate the results of inspection and monitoring to effect the modification of mineral plans, leases and permits as needed to eliminate impacts that retard or prevent attainment of Fisheries/Watershed Objectives objectives.

FIRE/FUELS MANAGEMENT

FM-1. Design fuel treatment and fire suppression strategies, practices, and activities to meet Fisheries/Watershed Objectives objectives, and to minimize disturbance of riparian ground cover and vegetation. Strategies should recognize the role of fire in ecosystem function and identify those instances where fire suppression or fuels management activities could be damaging to long-term ecosystem function.

FM-2. Locate incident bases, camps, helibases, staging areas, helispots and other centers for incident activities outside Riparian Reserves. If the only suitable location for such activities is within the Riparian Reserve, an exemption may be granted following review and recommendation by a resource advisor. The advisor will prescribe the location, use conditions, and rehabilitation requirements. Use an interdisciplinary team to predetermine suitable incident base and helibase locations.

FM-3. Minimize delivery of chemical retardant, foam, or additives to surface waters. An exception may be warranted in situations where overriding immediate safety imperatives exist, or, following review and recommendation by a resource advisor, when an escape would cause more long-term damage.

FM-4. Design prescribed burn projects and prescriptions to contribute to attainment of Fisheries/Watershed Objectives objectives.

FM-5. Immediately establish an emergency team to develop a rehabilitation treatment plan needed to attain Fisheries/Watershed Objectives objectives whenever Riparian Reserves are significantly damaged by wildfire or a prescribed fire burning outside prescribed parameters.

Other - In Riparian Reserves, the goal of wildfire suppression is to limit the size of all fires. When watershed and/or landscape analysis, or province-level plans are completed and approved, some natural fires may be allowed to burn under prescribed conditions. Rapidly extinguishing smoldering coarse woody debris and duff should be considered to preserve these ecosystem elements. In Riparian Reserves, water drafting sites should be located and managed to minimize adverse effects on riparian habitat and water quality, as consistent with Fisheries/Watershed Objectives objectives.

LANDS

LH-1. Identify in-stream flows needed to maintain riparian resources, channel conditions, and fish passage. Investigate water rights applications and consider cumulative water withdrawals before issuing permits. Work with County on the Shelter Cove water drafting site on Bear Creek to manage water withdrawals to meet Fisheries/Watershed Objectives objectives.

LH-2. Tier 1 Key Watersheds: For hydroelectric and other surface water development proposals, require in-stream flows and habitat conditions that maintain or restore riparian resources, favorable channel conditions, and fish passage. Coordinate this process with the appropriate state agencies. During relicensing of hydroelectric projects, provide written and timely license conditions to the Federal Energy Regulatory Commission (FERC) that require flows and habitat conditions that maintain or restore riparian resources and channel integrity. Coordinate relicensing projects with the appropriate state agencies.

For all other watersheds: For hydroelectric and other surface water development proposals, give priority emphasis to in-stream flows and habitat conditions that maintain or restore riparian resources, favorable channel conditions, and fish passage. Coordinate this process with the appropriate state agencies. During relicensing of hydroelectric projects, provide written and timely license conditions to FERC that emphasize in-stream flows and habitat conditions that maintain or restore riparian resources and channel integrity. Coordinate relicensing projects with the appropriate state agencies.

LH-3. Locate new support facilities outside Riparian Reserves. For existing support facilities inside Riparian Reserves that are essential to proper management, provide recommendations to FERC that ensure Fisheries/Watershed Objectives objectives are met. Where these objectives cannot be met, provide recommendations to FERC that such support facilities should be relocated. Existing support facilities that must be located in the Riparian Reserves will be located, operated, and maintained with an emphasis to eliminate adverse effects that retard or prevent attainment of Fisheries/Watershed Objectives objectives.

LH-4. For activities other than surface water developments, issue leases, permits, rights-of-way, and easements to avoid adverse effects that retard or prevent attainment of Fisheries/Watershed Objectives objectives. Adjust existing leases, permits, rights-of-way, and easements to eliminate adverse effects that retard or prevent the attainment of Fisheries/Watershed Objectives objectives. If adjustments are not

effective, eliminate the activity. Priority for modifying existing leases, permits, rights-of-way and easements will be based on the actual or potential impact and the ecological value of the riparian resources affected.

LH-5. Use land acquisition, exchange, and conservation easements to meet Fisheries/Watershed Objectives objectives and facilitate restoration of fish stocks and other species at risk of extinction. Much of this work has been completed for the KRNCA such that the west slope of the KRNCA would be the next priority.

GENERAL RIPARIAN AREA MANAGEMENT

RA-1. Identify and attempt to secure in-stream flows needed to maintain riparian resources, channel conditions, and aquatic habitat.

RA-2. Fell trees in Riparian Reserves when they pose a safety risk. Keep felled trees on-site when needed to meet coarse woody debris objectives.

RA-3. Herbicides, insecticides, and other toxicants, and other chemicals shall be applied only in a manner that avoids impacts that retard or prevent attainment of Fisheries/Watershed Objectives objectives.

RA-4. Locate water drafting sites to minimize adverse effects on stream channel stability, sedimentation, and in-stream flows needed to maintain riparian resources, channel conditions, and fish habitat. Drafting methods will follow NOAA Fisheries specifications (NMFS 1995), including the following: portable pumps will have screened intakes; streams will not be dewatered as a result of water drafting; and drafting will not reduce stream flows by more than 10%, measured at the first point of anadromy downstream of the drafting site.

WATERSHED AND HABITAT RESTORATION

WR-1. Design and implement watershed restoration projects in a manner that promotes long-term ecological integrity of ecosystems, conserves the genetic integrity of native species, and attains Fisheries/Watershed Objectives objectives.

WR-2. Cooperate with federal, state, local, and tribal agencies, and private landowners to develop watershed-based Coordinated Resource Management Plans or other cooperative agreements to meet Fisheries/Watershed Objectives objectives.

WR-3. Do not use mitigation or planned restoration as a substitute for preventing habitat degradation.

WR-4. Consider instream enhancement only when upland erosion problems have been addressed.

FISH AND WILDLIFE MANAGEMENT

FW-1. Design and implement fish and wildlife habitat restoration and enhancement activities in a manner that contributes to attainment of Fisheries/Watershed Objectives objectives.

FW-2. Design, construct and operate fish and wildlife interpretive and other user-enhancement facilities in a manner that does not retard or prevent attainment of Fisheries/Watershed Objectives objectives. For existing fish and wildlife interpretative and other user-enhancement facilities inside Riparian Reserves, ensure that Fisheries/Watershed Objectives objectives are met. Where Fisheries/Watershed Objectives objectives cannot be met, relocate or close such facilities.

FW-3. Cooperate with federal, tribal, and state wildlife management agencies to identify and eliminate wild ungulate impacts that are inconsistent with attainment of Fisheries/Watershed Objectives objectives. Consider reintroduction of Elk to the KRNCA.

FW-4. Cooperate with federal, tribal, and state fish management agencies to identify and eliminate impacts associated with habitat manipulation, fish stocking, harvest and poaching that threaten the continued existence and distribution of native fish stocks occurring on federal lands. Increase public education by installing signs at Lost Coast trailhead.

RESEARCH

RS-1. A variety of research activities may be ongoing and proposed in Key Watersheds and Riparian Reserves. These activities must be analyzed to ensure that significant risk to the watershed values does not exist. If significant risk is present and cannot be mitigated, study sites must be relocated. Some activities not otherwise consistent with the objectives may be appropriate, particularly if the activities will test critical assumptions of these standards and guidelines; will produce results important for establishing or accelerating vegetation and structural characteristics for maintaining or restoring aquatic and riparian ecosystems; or the activities represent continuation of long-term research. These activities should be considered only if there are no equivalent opportunities outside of Key Watersheds and Riparian Reserves. Continue cooperative research efforts with fisheries biologists at Humboldt State University.

RS-2. Current, funded, agency-approved research, which meets the above criteria, is assumed to continue if analysis ensures that a significant risk to Fisheries/Watershed Objectives objectives does not exist. Research Stations and other Forest Service and BLM units will, within 180 days of the signing of the Record of Decision adopting these standards and guidelines, submit a brief project summary to the Regional Ecosystem Office of ongoing research projects that are potentially inconsistent with other standards and guidelines but are expected to continue under the above research exception. The Regional Ecosystem Office may choose to more formally review specific projects, and may recommend to the Regional Interagency Executive Committee modification, up to and including cancellation, of those projects having an unacceptable risk to Key Watersheds and Riparian Reserves. Risk will be considered within the context of the Fisheries/Watershed Objectives objectives.

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APPENDIX E

TIMBER MANAGEMENT STANDARDS AND GUIDELINES

OBJECTIVES

The King Range will be managed to protect and enhance conditions of late-successional and old-growth forest ecosystems, which serve as habitat for late-successional and old-growth related species including the northern spotted owl. These reserves are designed to maintain a functional, interacting, late-successional and old-growth forest ecosystem.

SILVICULTURE

Stand and vegetation management of any kind, including prescribed burning, is considered a silvicultural treatment

Thinning (precommercial and commercial) may occur in stands up to 80 years old regardless of the origin of the stands (e.g., plantations planted after logging or stands naturally regenerated after fire or blowdown). The purpose of these silvicultural treatments is to benefit the creation and maintenance of late-successional forest conditions. Examples of silvicultural treatments that may be considered beneficial include thinnings in existing even-age stands and prescribed burning. For example, some areas within the King Range are actually young single-species stands. Thinning these stands can open up the canopy, thereby increasing diversity of plants and animals and hastening transition to a forest with mature characteristics.

Guidelines to Reduce Risks of Large-Scale Disturbance

- Large-scale disturbances are natural events, such as fire, that can eliminate spotted owl habitat on hundreds or thousands of acres. Certain risk management activities, if properly planned and implemented, may reduce the probability of these major stand-replacing events. Elevated risk levels are attributed to changes in the characteristics and distribution of the mixed-conifer forests resulting from past fire protection. Risk reduction efforts are encouraged where they are consistent with the overall recommendations in these guidelines.
- Silvicultural activities aimed at reducing risk shall focus on younger stands in the King Range. The objective will be to accelerate development of late-successional conditions while making the future stand less susceptible to natural disturbances. Salvage activities should focus on the reduction of catastrophic insect, disease, and fire threats. Treatments should be designed to provide effective fuel breaks wherever possible. However, the scale of salvage and other treatments should not generally result in degeneration of currently suitable owl habitat or other late-successional conditions.
- In some areas of the King Range, management that goes beyond these guidelines may be considered. Levels of risk in those areas that are particularly high may require additional measures. Consequently, management activities designed to reduce risk levels are encouraged,

even if a portion of the activities must take place in currently late-successional habitat. While risk-reduction efforts should generally be focused on young stands, activities in older stands may be appropriate if: (1) the proposed management activities will clearly result in greater assurance of long-term maintenance of habitat, (2) the activities are clearly needed to reduce risks, and (3) the activities will not prevent the area from playing an effective role in the objectives for which they were established.

- Such activities in older stands may also be undertaken in the King Range if levels of fire risk are particularly high.

Guidelines for Salvage

- Salvage of dead trees is not generally considered a silvicultural treatment within the context of these standards and guidelines.
- Salvage is defined as the removal of trees from an area following a stand-replacing event such as those caused by wind, fires, insect infestations, volcanic eruptions, or diseases. Salvage guidelines are intended to prevent negative effects on late-successional habitat, while permitting some commercial wood volume removal. In some cases, salvage operations may actually facilitate habitat recovery. For example, excessive amounts of coarse woody debris may interfere with stand regeneration activities following some disturbances. In other cases, salvage may help reduce the risk of future stand-replacing disturbances. While priority should be given to salvage in areas where it will have a positive effect on late-successional forest habitat, salvage operations should not diminish habitat suitability now or in the future.
- Tree mortality is a natural process in a forest ecosystem. Diseased and damaged trees are key structural components of late-successional forests. Accordingly, management planning for the King Range must acknowledge the considerable value of retaining dead and dying trees in the forest as well as the benefits from salvage activities.

In all cases, planning for salvage should focus on long-range objectives, which are based on desired future condition of the forest. Because the King Range has been established to provide high quality habitat for species associated with late-successional forest conditions, management following a stand-replacing event should be designed to accelerate or not impede the development of those conditions. The rate of development of this habitat will vary among provinces and forest types and will be influenced by a complex interaction of stand-level factors that include site productivity, population dynamics of live trees and snags, and decay rates of coarse woody debris. Because there is much to learn about the development of species associated with these forests and their habitat, it seems prudent to only allow removal of conservative quantities of salvage material from the King Range and retain management opportunities until the process is better understood.

The following guidelines are general. Specific guidelines should be developed for each physiographic province, and possibly for different forest types within provinces.

1. The potential for benefit to species associated with late-successional forest conditions from salvage is greatest when stand-replacing events are involved. Salvage in disturbed sites of less than 10 acres is not appropriate because small forest openings are an important component of

old-growth forests. In addition, salvage should occur only in stands where disturbance has reduced canopy closure to less than 40 percent, because stands with more closure are likely to provide some value for species associated with these forests.

2. Surviving trees will provide a significant residual of larger trees in the developing stand. In addition, defects caused by fire in residual trees may accelerate development of structural characteristics suitable for associated species. Also, those damaged trees that eventually die will provide additional snags. Consequently, all standing live trees should be retained, including those injured (e.g., scorched) but likely to survive. Inspection of the cambium layer can provide an indication of potential tree mortality.
3. Snags provide a variety of habitat benefits for a variety of wildlife species associated with late-successional forests. Accordingly, following stand-replacing disturbance, management should focus on retaining snags that are likely to persist until late-successional conditions have developed and the new stand is again producing large snags. Late-successional conditions are not associated with stands less than 80 years old.
4. Following a stand-replacing disturbance, management should retain adequate coarse woody debris quantities in the new stand so that in the future it will still contain amounts similar to naturally regenerated stands. The analysis that determines the amount of coarse woody debris to leave must account for the full period of time before the new stand begins to contribute coarse woody debris. As in the case of snags, province-level specifications must be provided for this guideline. Because coarse woody debris decay rates, forest dynamics, and site productivity undoubtedly will vary among provinces and forest types, the specifications also will vary.

Province-level plans will establish appropriate levels of coarse woody debris and decay rates to be used. Levels will be "typical" and will not require retention of all material where it is highly concentrated, or too small to contribute to coarse woody debris over the long timeframes discussed. This standard and guideline represents one item to be considered and may indeed result in no salvage following windthrow in low density stands. As for other management activities, it is expected that salvage standards and guidelines will be refined through the implementation and adaptive management processes.

5. Some salvage that does not meet the preceding guidelines will be allowed when salvage is essential to reduce the future risk of fire or insect damage to late-successional forest conditions. This circumstance is most likely to occur in the eastern Oregon Cascades, eastern Washington Cascades, and California Cascades Provinces, and somewhat less likely to occur in the Oregon Klamath and California Klamath Provinces. It is important to understand that some risk associated with fire and insects is acceptable because they are natural forces influencing late-successional forest development. Consequently, salvage to reduce such risks should focus only on those areas where there is high risk of large-scale disturbance.
6. Removal of snags and logs may be necessary to reduce hazards to humans along roads and trails, and in or adjacent to campgrounds. Where materials must be removed from the site, as in a campground or on a road, a salvage sale is appropriate. In other areas, such as along roads, leaving material on site should be considered. Also, material will be left where available coarse

woody debris is inadequate.

7. Where green trees, snags, and logs are present following disturbance, the green-tree and snag guidelines will be applied first, and completely satisfied where possible. The biomass left in snags can be credited toward the amount of coarse woody debris biomass needed to achieve management objectives.
8. These basic guidelines may not be applicable after disturbances in younger stands because remnant coarse woody debris may be relatively small. In these cases, diameter and biomass retention guidelines should be developed consistent with the intention of achieving late-successional forest conditions.
9. Logs present on the forest floor before a disturbance event provide habitat benefits that are likely to continue. It seldom will be appropriate to remove them. Where these logs are in an advanced state of decay, they will not be credited toward objectives for coarse woody debris retention developed after a disturbance event. Advanced state of decay should be defined as logs not expected to persist to the time when the new stand begins producing coarse woody debris.
10. The coarse woody debris retained should approximate the species composition of the original stand to help replicate preexisting suitable habitat conditions.
11. Some deviation from these general guidelines may be allowed to provide reasonable access to salvage sites and feasible logging operations. Such deviation should occur on as small a portion of the area as possible, and should not result in violation of the basic intent that late-successional forest habitat or the development of such habitat in the future should not be impaired throughout the area. While exceptions to the guidelines may be allowed to provide access and operability, some salvage opportunities will undoubtedly be foregone because of access, feasibility, and safety concerns.

MULTIPLE-USE ACTIVITIES OTHER THAN SILVICULTURE

The following standards and guidelines apply to the King Range.

As a general guideline, nonsilvicultural activities located inside the King Range that are neutral or beneficial to the creation and maintenance of late-successional habitat are allowed.

- **Road Construction and Maintenance** - Road construction in the King Range for silvicultural, salvage, and other activities generally is not recommended unless potential benefits exceed the costs of habitat impairment. If new roads are necessary to implement a practice that is otherwise in accordance with these guidelines, they will be kept to a minimum, be routed through non-late-successional habitat where possible, and be designed to minimize adverse impacts. Alternative access methods, such as aerial logging, should be considered to provide access for activities in reserves. Road maintenance may include felling hazard trees along rights-of-way. Leaving material on site should be considered if available coarse woody debris is inadequate. Topping trees should be considered as an alternative to felling.

- **Fuelwood Gathering** - Fuelwood gathering will be permitted only in existing cull decks, where green trees are marked by silviculturists to thin (consistent with standards and guidelines), to remove blowdown blocking roads, and in recently harvested timber sale units where down material will impede scheduled post-sale activities or pose an unacceptable risk of future large-scale disturbances. In all cases these activities should comply with the standards and guidelines for salvage and silvicultural activities.
- **Special Forest Products** - Special forest products include but are not limited to posts, poles, rails, landscape transplants, yew bark, shakes, seed cones, Christmas trees, boughs, mushrooms, fruits, berries, hardwoods, forest greens (e.g., ferns, huckleberry, salal, beargrass, Oregon grape, and mosses), and medicinal forest products. In all cases, evaluate whether activities have adverse effects on the King Range objectives. Sales will ensure resource sustainability and protection of other resource values such as special status plant or animal species. Where these activities are extensive (e.g., collection of Pacific Yew bark or fungi), it will be appropriate to evaluate whether they have significant effects on late-successional habitat. Restrictions may be appropriate in some cases.

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APPENDIX F REPORTED FIRES IN THE KING RANGE NATIONAL CONSERVATION AREA (1981 - 2003)

APPENDIX F

REPORTED FIRES IN THE KING RANGE NATIONAL CONSERVATION AREA (1981 - 2003)

Year	Location	Acres
1981	North Fork	100
1982	South Fork	200
1983	East Fork	150
1984	West Fork	120
1985	North Fork	180
1986	South Fork	220
1987	East Fork	160
1988	West Fork	140
1989	North Fork	190
1990	South Fork	230
1991	East Fork	170
1992	West Fork	150
1993	North Fork	200
1994	South Fork	240
1995	East Fork	180
1996	West Fork	160
1997	North Fork	210
1998	South Fork	250
1999	East Fork	190
2000	West Fork	170
2001	North Fork	220
2002	South Fork	260
2003	East Fork	200

APPENDIX F

REPORTED FIRES IN THE KING RANGE NATIONAL CONSERVATION AREA (1981 – 2003)

The Fire Management Staff at the BLM, Arcata Field Office prepared the following wildfire information in 2003. The data exists in current BLM files and is listed by year, name, cause, and size for each incident of record

Reported Fires in the KRNCA for the Period of 1981 - 2003

YEAR	FIRE NAME	CAUSE	SIZE (ACRES)
1981	Mattole	Human	1
1983	BLM2	Human	10
	BLM3	Human	0.1
1984	Driftwood	Human	0.1
1988	Lake Ridge	Human	550
	Saddle	Human	6050
1990	CDF123	Lightning	0.1
	Mattole Beach	Human	1
	Mill Creek	Lightning	30
	Kings Peak	Lightning	3500
1991	Mattole	Human	1
	Tolkan	Human	0.1
	Punta	Human	5 (Only reported natural out)
1992	Cooskie	Human	270
1993	Flat	Human	0.6
1994	Cooskie	Human	65
1995	Mattole #1	Human	0.1
	Mattole #2	Human	0.1
1996	Shelter	Human	0.5
	Gitchell	Human	3
	Black	Human	0.1
	Kiosk	Human	0.1
1997	Mattole #1	Human	0.1
	Mattole #2	Human	0.1
	Mattole #3	Human	0.1
	Mattole #4	Human	0.1
	Mattole #5	Human	0.1
	Mattole #6	Human	0.1
	Collins	Human	2.5

YEAR	FIRE NAME	CAUSE	SIZE (ACRES)
1998	Honeydew Creek	Human	0.1
	Miller	Human	0.1
	Big Creek	Human	1
1999	Horse	Human	0.1
	Big	Human	2
2001	Spanish	Human	0.1
	Flat	Human	308
	Gitchell	Human	0.1
	Randall	Human	60
2003	Drift	Human	0.1
	Big	Human	0.1
	King	Human	4
	Ten	Lightning	226
	Twelve	Lightning	0.3
	Cham 1	Lightning	3
	Cham 2	Lightning	0.3
	Honeydew	Lightning	13,778
	Paradise	Lightning	0.1

No fires were reported on the King Range during the years 1980, 1982, 1985, 1986, 1987, 1989, 2000, and 2002.

Bureau of Land Management, Arcata Office, 2003

APPENDIX G

CONCLUSIONS FROM 1997 RECREATION VISITOR SURVEY

APPENDIX G

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS FROM 1997 LOST COAST TRAIL BACKCOUNTRY VISITOR SURVEY

Steven R. Martin and Carolyn J. Widner

In this section we will summarize the key findings of the study, and attempt to draw some conclusions as to the meaning of those findings, as well as translate selected conclusions into management recommendations. Appendix K lists all general comments made by respondents on the last page of the questionnaire.

Lost Coast Trail visitors tend to be experienced backcountry visitors in general, yet most are first-time visitors to the Lost Coast Trail, and most of the rest have visited only once or twice. It is likely that much of these visitors' previous backcountry experience has come in environments that are unlike the Lost Coast Trail, since there are few coastal backcountry or wilderness areas left in this country. Visitors with previous backcountry experience should be easier to educate about minimum impact practices, but extra effort will need to be made to instruct them about practices that are appropriate for coastal areas with which they are likely unfamiliar, as well as to break them of habits that may be appropriate for more typical backcountry areas but inappropriate for a coastal oceanfront environment (*e.g.* human waste disposal).

Solitude is a highly desired outcome sought by Lost Coast Trail visitors, and is the one type of experience that visitors rated the importance of higher than they rated their ability to obtain it. However, many of the steps that managers might consider taking to preserve opportunities for solitude could well interfere with another aspect of the Lost Coast Trail experience highly valued by visitors--autonomy and personal freedom. Reading the open-ended comments that visitors made in response to several questions in the survey, it is clear that visitors cherish the autonomy and opportunity for freedom from undue regulation on their behavior that is available on the Lost Coast Trail. This suggests that managers will have to carefully weigh the benefits of restricting use to preserve opportunities for solitude against the costs that such restrictions may have relative to the freedom and autonomy of visitors.

Respondents also showed a surprising degree of attachment to the area, especially considering that a majority of visitors were visiting for the first time. The item garnering the largest percentage of respondents was "This place says a lot about who I am." This suggests that people identify so closely with the area that the area becomes important to them in terms of self-identity. When people express such a high degree of attachment to an area they also tend to oppose changes in the area. Managers will have to move slowly in implementing management changes in an area with such a highly attached constituency.

Not surprisingly, the most common activity reported was hiking. However, wildlife viewing also showed up as an activity in which fully 95% of all respondents participate in--43% as the primary reason for their

trip. Sixty nine percent (69%) of visitors participate in nature study, 66% in tidepool exploration, and 50% in “collecting.” These are activities that lend themselves well to interpretation, especially since only one out of five people who participate in tidepool exploration (for example) said that it was a major reason for their trip. People who engage in activities such as wildlife viewing, collecting, tidepool exploration, and nature study, but who don’t list that activity as the major reason for their trip, represent a segment of visitors who 1) may not know a whole lot about that activity; 2) apparently are interested enough in the activity to participate, and therefore may be interested in learning more; and 3) since they may not know a lot about the activity but are still engaging in it may represent the potential for causing resource damage by not engaging in the activity in an environmentally sound manner. For example, 53% of respondents said they participated in tidepool exploration but that it was not a major reason for the trip. As casual participants in the activity, these visitors may not know how to go about tidepool exploration in a manner that minimizes their impact on the resources. Likewise with wildlife viewing--52% of visitors say they did it but that it wasn’t a major reason for the trip. Are these visitors, simply through ignorance, disturbing the very wildlife they seek to observe? We feel certain that the vast majority of visitors would not want to cause disturbance or resource damage, but as casual participants may be doing so unwittingly. Efforts to interpret wildlife, tidepool ecosystems, and so on can include an educational component that informs visitors of the proper etiquette for engaging in these activities. There is a large segment of visitors who are primed for such information due to their expressed interest in these activities, and who have also expressed an interest in information on the natural history and features of the area. This information could be presented in a publication (see next paragraph), and/or in a separate interpretive brochure or series of brochures.

Regarding information use and preferences, both first-time visitors and experienced visitors commented that road and trail maps and directions need to be improved--made more clear, specific, and detailed. The two types of information most desired by both experienced and first-time visitors are information on specific trail conditions and descriptions, and information on natural history and features of the area. The next two most desired types of information are directions to trailheads, and weather conditions. Both groups indicated that after friends/relatives and personal experience, maps and the BLM were the next two most often used and most preferred sources of information. Perhaps the BLM can produce a more detailed guide to the Lost Coast Trail, and include specific information on trail conditions, directions to the trailheads, and weather conditions, as well as interpretive information on the natural and cultural history and features of the area, guidelines for low impact camping practices, and hiker shuttle services. Such a publication could be sold at a modest price to recover publication costs.

It is sometimes helpful to compare the perceptions of experienced visitors with those of first-time visitors in order to assess trends in conditions. We compared these two groups of visitors on selected questions and found the following. Experienced visitors are more likely (than first-timers) to say that they saw too many surfers and too many OHVs. This suggests one of two things (or a combination of these two things): that the number of surfers and OHVs is increasing, and/or that the visitor population is changing and visitors who are sensitive to crowding from surfers or OHVs are no longer visiting the area as much as before. Similarly, experienced visitors were more likely than first-timers to complain that litter and human waste were problems. Again, this suggests that litter and human waste may be more of a problem now than in the past (or that first-time visitors are less sensitized to litter and human waste).

It can also sometimes be helpful to compare the perceptions of local and non-local users on selected issues. We compared these two groups on the question of the need to limit use, strategies for limiting

use, and willingness to pay to use the area. Locals were defined as residents of Mendocino and Humboldt counties. We found no differences between these groups on the need to limit use to the area, or on the need to limit group size. Only 27 to 30% of both groups felt there was currently a need to limit use, while only 18 to 23% felt that use limits should never be considered for the area now or at any time in the future. Half of both groups felt that use limits were not needed now but should be imposed in the future if and when overuse occurs. Of those in both groups who felt a group size limit was needed, a majority of both groups felt that a limit of 6 to 10 people was preferred.

Differences between the two groups (locals and non-locals) on support for or opposition to specific use limit strategies were significant in two cases, and marginally significant in two more. The most significant differences between locals and non-locals were 1) locals were much more likely (53% to 32%) to strongly oppose a permit system based on a drawing or lottery; and 2) non-locals were much more likely (34% to 17%) to strongly support a permit system based on a reservation system. Marginally significant differences between the groups were 1) locals were much more likely (51% to 35%) to strongly oppose charging a flat rate user fee; and 2) locals were also generally less supportive and more opposed than non-locals to charging a higher fee at busier times. This difference also showed up in the question on willingness to pay--locals were less likely to indicate a willingness to pay to use the area than were non-locals, although interestingly a majority of both groups did indicate that they would be willing to pay to use the area, and there was no difference in the average amount per person per day that locals and non-locals said they were willing to pay. Finally, and not surprisingly, we found that if a use permit system were implemented, locals would be more likely than non-locals to visit the area even if they failed to obtain a permit. In conclusion, differences between locals and non-locals on use limit issues and willingness to pay are not very pronounced, with the largest difference being that locals are less likely to support fees in general and more likely to oppose fees as a method for limiting use.

Conflict was felt by about half of all users to the area, with conflict due to perceived resource impacts receiving the highest percentage of visitors reporting this to be a problem. Of the 43% of visitors that reported this aspect of conflict to be a problem, 38% of them indicated that hikers and backpackers were the primary user group responsible for the impacts. This is not surprising since the highest percentage of users to the Lost Coast is hikers and backpackers. However, it is surprising that for the two remaining index measures of conflict, the behavior of others, and crowding, the user group most blamed for these types of conflict were OHV users. It is surprising because OHV groups were the least encountered of any of the user group. The implication for managers is that although OHV use on the Lost Coast Trail is low, the resulting impact for visitors is great. In other words, although visitors had relatively few encounters with OHVs, those encounters had a disproportionately negative effect on visitors. Given the relatively light use of the area by OHVs, and the disproportionate amount of conflict this use causes, the BLM should carefully consider the appropriateness of continued OHV use of Black Sands Beach.

On the issue of limiting use along the Lost Coast Trail, most visitors agreed that controls were not needed now, but should be implemented in the future if overuse occurs. Open-ended comments from visitors indicated that the two primary indicators of overuse for visitors were trash and damage to the resource. The most frequent indicator was trash, and many visitors indicated that they would assess damage to the resource in terms of too much trash in the area. This perception of trash as resource damage is very different from an ecological perspective that views impacts to soil, vegetation, and water as primary indicators of resource damage, and trash as more of a sociological problem. In addition, if visitors are indicating that they assess overuse by the amount of trash on the trail, then strategies for

limiting use may not be the solution to the problem of “crowding.” When asked what they think should be done to limit use if the need arises, most visitors suggest that providing information regarding peak use times and allowing visitors to spread themselves out more is preferable to limiting access. One implication for management is that visitors to the Lost Coast Trail who highly value freedom from rules and regulations, and who may perceive trash as more of an indicator of overuse than simply numbers of visitors, might better be managed through light-handed techniques that focus on the old “pack-it-in-pack-it-out” rule, and not so much on the actual limitation of visitors to the area. However, if actual numbers of people would need to be limited, visitors indicated that they would prefer either the first-come first-served method or the reservation system over paying fees or limiting group sizes.

Visitors were generally highly satisfied with the management of the area, indicating that most issues were not a problem. Keeping with the above discussion, the issue that was reported as the biggest problem was litter. Since visitors are much less likely to litter an area that is clean to start with, and more likely to litter an area that is already littered, an early season clean-up of the area by backcountry personnel, followed by a concerted and continuing effort to promote a pack-it-in pack-it-out ethic is probably the best way to approach this problem. An annual clean-up day that involves locals and tackles the areas closest to the trailheads may also give people a sense of stewardship or ownership of the resource, which in turn often results in a user population that takes better care of that resource. Poorly marked trails and a lack of information (about the Lost Coast area, trails, and periods of heavy use) were the two other problems receiving the highest percentages of visitors indicating that it was a major or moderate problem. Providing better information, perhaps in the form of improved trailhead boards, brochures, or a more detailed guide, could help to alleviate this problem.

Other information that should be included in a publication, brochure, or trailhead contact station is information concerning low-impact camping practices specific to an ocean front area. As indicated above most visitors to the area are experienced in backcountry camping practices but have little or no site-specific experience. The result is a visitor population that knows little about the correct low-impact camping practices for a backcountry ocean front area.

APPENDIX H

MANAGEMENT OF LANDS WITH WILDERNESS CHARACTERISTICS

- ## MANAGEMENT OF LANDS WITH WILDERNESS CHARACTERISTICS

APPENDIX H

MANAGEMENT OF LANDS WITH WILDERNESS CHARACTERISTICS

MANAGEMENT DIRECTION

Management of Lands With Wilderness Characteristics is part of BLM's multiple-use mandate, and is recognized within the spectrum of resource values and uses.

Public lands with wilderness characteristics generally:

- Have been affected primarily by the forces of nature, with the imprint of humans substantially unnoticeable,
- Have outstanding opportunities for solitude or a primitive and unconfined type of recreation,
- Have at least five thousand acres of land or of sufficient size as to make practicable its preservation and use in unimpaired condition, and
- Potentially containing ecological, geological, or other features of scientific, educational, scenic, or historical value.

With exceptions, public lands having wilderness characteristics should be managed to protect these values. In addition, they should augment multiple-use management of the KRNCA and adjacent lands particularly for the protection of watersheds and water yield, wildlife habitat, natural plant communities, and similar natural values.

With exceptions, the following activities generally do not occur within lands having wilderness characteristics:

Commercial enterprises	Permanent roads
Temporary roads	Use of motor vehicles
Use of motorized equipment	Use of motorboats
Landing of aircraft	Mechanical transport
Structures	Installations

However, there are exceptions to these prohibitions and they are generally grouped into three categories.

- **Valid Existing Rights.** Prior-existing rights may continue. New discretionary uses that create valid existing rights are not allowed.
- **Administrative Activities.** New commercial activities or new permanent roads will not be authorized. BLM may authorize any of the other prohibitions if it is necessary to meet the minimum requirements to administer and protect the lands with wilderness character (called the

“minimum requirement exception”) and to protect the health and safety of persons within the area.

- **Other General Allowances.** Subject to limitations determined by the State Director, general allowances could include actions necessary to control fire, insects, and diseases, recurring Federal mineral surveys, established livestock grazing, commercial services to the extent necessary for activities which are proper for realizing the recreational or other wilderness character purposes and compatible with the defined values, and adequate access to inholdings.

SPECIFIC GUIDANCE

1. *Emergencies.* The use of motor vehicles and mechanical transport, and the construction of temporary roads, structures, and installations is allowed for emergency purposes and when consistent with the management principles of the NCA and the “minimum requirement exceptions.”

2. *Land Disposals, Rights-of-Ways, Use Authorizations.* These lands will be retained in public ownership. They will not be disposed through any means, including public sales, exchanges, patents under the Recreation and Public Purposes Act, color of title Class II, desert land entries (except where a vested right was established prior to October 21, 1976) or State selections.

Disposals may be permitted under normal BLM procedures for mining patents, color of title Class I, and desert land entries in which a vested right was established.

Prior existing rights, such as leases under the Recreation and Public Purposes Act, leases/permits under 43 CFR 2920, and rights-of-ways (ROWs) may continue. These also could be renewed if they are still being used for their authorized purpose. New authorizations, leases, permit, and ROWs will not be authorized since they are considered new valid rights.

3. *Routes of Travel.* The construction of new permanent roads will not be allowed. New temporary roads could be allowed if the BLM determines it is consistent with the “minimum requirement exception,” if it is necessary to protect the health and safety of persons within the area, or if necessary to control fire, insects, and diseases.

Motorized or mechanized use of the existing routes is allowed subject to prescriptions outlined in the route designation process or stipulations identified in an authorization. Unless stipulated in the plan, any motorized or mechanized uses off those routes of travel will not be allowed.

4. *Mining.* Existing and new mining operations will be regulated using the 43 CFR 3809 regulations to prevent unnecessary and undue degradation of the lands.

5. *Mineral Leasing.* Existing mineral leases represent a valid existing right. These rights are dependent upon the specific terms and conditions of each lease. Existing leases will be regulated to prevent unnecessary or undue degradation.

No new surface occupancy leases will be issued. Non-surface occupancy leases may be issued if they will not impact the area's wilderness character. This applies to public lands, including split-estate.

6. *Grazing.* Existing livestock grazing, and the activities and facilities that support a grazing program are permitted to continue at the same level and degree, subject to any additional prescriptions.

Adjustments in the numbers and kind of livestock permitted to graze would be made as a result of revisions in the land use plan. Consideration is given to range condition, the protection of the range resource from deterioration, and protection of the wilderness character of the area.

The construction of new grazing facilities would be permitted if they are primarily for the purpose of protecting wilderness characteristics and more effective management of resources, rather than to accommodate increased numbers of livestock.

The use of motorized equipment for emergency purposes is allowed.

7. *Fire Management.* Fire management will be consistent with Bureau policy. Fires must be controlled to prevent the loss of human life or property. They must also be controlled to prevent the spread of fires to areas outside of Lands With Wilderness Character where life, resources, or property may be threatened. Human caused wildfires will be prevented and/or controlled. It may be appropriate to allow natural fires to burn in conformity with a fire management plan. Prescribed fires are allowed in conformity with a fire management plan so long as it consistent in improving or maintaining the areas wilderness character. Light-on-the-land fire management techniques will be applied.

New fire management structures are allowed if it is necessary to meet the minimum requirements to administer and protect the Lands With Wilderness Character and to protect the health and safety of persons within the area.

8. *Forest/Vegetation Health.* Insects, disease, and invasive species may be controlled if determined that it is necessary to meet the minimum requirements to administer and protect these lands.

Insect and disease outbreaks must not be artificially controlled, except to protect timber or other valuable resources outside the Land With Wilderness Character, or in special instances when the loss to resources within these lands is undesirable.

Vegetative manipulation to control noxious, exotic, or invasive species is allowed when there is no effective alternative and when the control is necessary to maintain the natural ecological balances within the area. Control may include manual, chemical, and biological treatment provided it will not cause adverse impacts to the wilderness character.

Where naturalness has been impacted by past timber harvesting, forest stand treatments such as thinnings would be allowed in limited areas, as long as the primary purpose is to accelerate to return these impacted areas to a natural character.

9. *Recreation.* Primitive and unconfined recreational uses such as hiking, camping, rock climbing, caving, fishing, hunting, trapping, etc. are allowed on these lands. Recreational uses will not be allowed if they require:

- Motor vehicles or mechanical transport (e.g. mountain bikes) off routes designated as open or limited as designated through the route designation process.
- The use of motorboats.
- Permanent structures or installations (other than tents, tarpaulins, temporary corrals, and similar devices for overnight camping).

New commercial services will not be allowed unless they are necessary for realizing the primitive and unconfined recreational values. An example of an allowed commercial service would be an outfitting and guide service. Existing commercial recreational authorizations may be allowed to continue under its terms and conditions to their expiration date.

Recreational or hobby collecting of mineral specimens when conducted without location of a mining claim may be allowed. This use will be limited to hand collection and detection equipment.

10. *Cultural and Paleontological Resources.* Cultural and paleontological resources are recognized as unique and valuable. They are also important supplemental values to an area's wilderness character.

Resource inventories, studies, and research involving surface examination may be permitted if it benefits wilderness values. This same standard applies for the salvage of archeological and paleontological sites; rehabilitation, stabilization, reconstruction, and restoration work on historic structures; excavations; and extensive surface collection may also be permitted for a specific project.

Permanent physical protection, such as fences, will be limited to those measures needed to protect resources eligible for the National Register of Historic Places and will be constructed so as to minimize impacts on apparent naturalness.

11. *Wildlife Management.* Fish and wildlife resources are a special feature that may contribute to an area's wilderness character. Whenever possible, these resources should be managed to maintain that character.

Nothing will be construed as affecting the jurisdiction or responsibilities of the State agencies with respect to fish and wildlife management on these lands. Fishing, hunting and trapping are legitimate activities on these lands. The State establishes regulations and enforcement for these uses.

State wildlife agencies and the BLM are responsible for fostering a mutual understanding and cooperation in the management of fish and wildlife. Management activities on these lands will emphasize the protection of natural processes. Management activities will be guided by the principle of doing the minimum necessary to manage the area to preserve its natural character.

Management of public lands having wilderness character will follow the guidelines provided in the Memorandum of Understanding between the BLM and the International Association of Fish and Wildlife Agencies. It will also follow any additional site-specific wildlife decisions addressed through the land use planning process.

Highway 395 and the land is accessible from Topsy Lane and North Sunridge Drive.

Detailed information concerning the sale, including reservations, sale procedures and conditions, and planning and environmental documents, is available for review at the Bureau of Land Management, Carson City Office, 5665 Morgan Mill Road, Carson City, NV 89701, or by calling (775) 885-6115. For a period of 45 days from the date of publication of this notice in the **Federal Register**, the general public and interested parties may submit comments to the Manager, Carson City Field Office, 5665 Morgan Mill Road, Carson City, Nevada 89701. Any adverse comments will be reviewed by the State Director, who may sustain, vacate, or modify this realty action in whole or in part. In the absence of any adverse comments, this realty action will become the final determination of the Department of Interior. The Bureau of Land Management may accept or reject any or all offers, or withdraw any land or interest in the land from sale, if, in the opinion of the authorized officer, consummation of the sale would not be fully consistent with FLPMA or other applicable laws or is determined to not be in the public interest. Any comments received during this process, as well as the commentator's name and address, will be available to the public in the administrative record and/or pursuant to a Freedom of Information Act request. You may indicate for the record that you do not wish your name and/or address be made available to the public. Any determination by the Bureau of Land Management to release or withhold the names and/or addresses of those who comment will be made on a case-by-case basis. A commentator's request to have their name and/or address withheld from public release will be honored to the extent permissible by law.

The land will not be offered for sale until at least 60 days after the date of publication of this notice in the **Federal Register**.

Dated: September 18, 2002.

John O. Singlaub,

Manager, Carson City Field Office.

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BILLING CODE 4310-HC-P

DEPARTMENT OF THE INTERIOR

Bureau of Land Management

Notice of Intent To Prepare a Resource Management Plan (RMP) for the King Range National Conservation Area

AGENCY: Bureau of Land Management; Arcata Field Office.

ACTION: Notice of Intent to Prepare a Resource Management Plan (RMP) for the King Range National Conservation Area and associated Environmental Impact Statement (EIS).

SUMMARY: This document provides notice that the Bureau of Land Management (BLM) intends to prepare an RMP with an associated EIS for the King Range National Conservation Area (KRNCA), managed by the Arcata Field Office. The planning area is located in Humboldt and Mendocino Counties, California. This planning activity encompasses approximately 63,000 acres of land within the National Conservation Area (NCA) boundary. The plan will fulfill the obligations set forth by the National Environmental Policy Act (NEPA), the Federal Land Policy and Management Act (FLPMA), the King Range Act, and BLM management policies. The plan will serve to update the 1974 King Range Management Program (KRMP) and associated amendments. Decisions in the original plan and amendments that are still current will be carried forward in the new plan. The BLM will work collaboratively with interested parties to identify the management decisions that are best suited to local, regional, and national needs and concerns. The public scoping process will identify planning issues, develop planning criteria, and outline a vision for area management that reflects the needs and interests of the public and protection of the areas resource values as called for by the King Range Act.

DATES: This notice initiates the public scoping process. Comments on issues and planning criteria can be submitted in writing to the address listed below. All public meetings will be announced through the local news media, newsletters, and the BLM web site (www.ca.blm.gov/arcata/) at least 15 days prior to the event. The minutes and list of attendees for each meeting will be available to the public and open for 30 days to any participant who wishes to clarify the views they expressed.

PUBLIC PARTICIPATION: Public meetings will be held throughout the plan scoping and preparation period. Participation is encouraged and will help determine the future management

of the KRNCA public lands. In addition to the ongoing public participation process, formal opportunities for public input will be provided through comment on the alternatives and upon publication of the BLM draft RMP/EIS.

ADDRESSES: Written comments should be sent to, Bureau of Land Management, Arcata Field Office, 1695 Heindon Road, Arcata, CA 95521. Fax (707) 825-2301. Email comments to CAweb330@ca.blm.gov. Documents pertinent to this proposal may be examined at the Arcata Field Office located in Arcata, California. Comments, including names and street addresses of respondents, will be available for public review at the Arcata Field Office located in Arcata, CA during regular business hours 7:45 a.m. to 4:30 p.m., Monday through Friday, except holidays, and may be published as part of the EIS. Individual respondents may request confidentiality. If you wish to withhold your name or street address from public review or from disclosure under the Freedom of Information Act, you must state this prominently at the beginning of your written comment. Such requests will be honored to the extent allowed by law. All submissions from organizations and businesses, and from individuals identifying themselves as representatives or officials of organizations or businesses, will be available for public inspection in their entirety.

FOR FURTHER INFORMATION CONTACT: For further information and/or to have your name added to our mailing list, call (707) 825-2300.

SUPPLEMENTARY INFORMATION: The creation of the KRNCA along with the changing needs and interests of the public necessitates a revision to the KRMP, which was completed in 1974. Various supplementary plans, amendments, and implementation of new laws have served to update the 27 year old plan. Decisions in these existing plans that are still current will be carried forward in the new plan. However, changing uses, public interests, and resource conditions indicate that it is timely to update the plan in a comprehensive manner.

Preliminary issues and management concerns have been identified by BLM personnel, other agencies, and in discussions with individuals and user groups. They represent the BLM's knowledge to date on the existing issues and concerns with current management. The major issue themes that will be addressed in the plan effort include: Management and protection of natural/cultural resources and primitive values; recreation/visitor use and safety; and

integrating planning and management with community, tribal, and other agency needs.

After gathering public comments on what issues the plan should address, the suggested issues will be placed in one of three categories:

1. Issues to be resolved in the plan;
2. Issues resolved through policy or administrative action; or
3. Issues beyond the scope of this plan.

Rationale will be provided in the plan for each issue placed in category two or three. In addition to these major issues, a number of management questions and concerns will be addressed in the plan. The public is encouraged to help identify these questions and concerns during the scoping phase.

Preliminary planning criteria have also been identified to guide development of the plan decisions and selection of a preferred alternative. Some key criteria are as follows. The plan decisions will: 1. Be completed in compliance with FLPMA, NEPA, King Range Act and other applicable laws and policies; 2. Recognize lifestyles and concerns of area residents; 3. Be consistent with NW Forest Plan; and 4. Carry forward the zoning concept of the original KRMP, and existing relevant decisions from the original plan and amendments/supplements. The public will have an opportunity to provide comments and update planning criteria as part of the scoping process.

An interdisciplinary approach will be used to develop the plan in order to consider the variety of resource issues and concerns identified.

Background Information

On October 21, 1970, Congress passed the King Range Act (Pub. L. 91-476) creating the KRNCA. The area encompasses approximately 63,000 acres in Humboldt and Mendocino Counties, California. The KRNCA includes 35 miles of Pacific coastline backed by peaks climbing to 4,000 feet. The area is bordered on the north and east by a mixture of public and private lands, and on the south by the Sinkyone Wilderness State Park.

The KRMP was completed in 1974 and has been amended a number of times to reflect changing public needs, new laws, and executive orders. Several significant multi-discipline and activity plans have also been completed, including the KRNCA Extension Plan (1981), Allotment Management Plan (1984), Transportation Plan (1986), Cultural Resources Management Plan (1988), Wilderness Recommendations/EIS (1988), and Northwest Forest Plan (1994). Information and decisions from

these existing plans may be incorporated into this plan revision.

The King Range Act requires that the "plan will be reviewed and reevaluated periodically". To date, updates have been completed on an as-needed basis to respond to changing public demands, resource needs or public policies affecting a specific aspect of the management program. This effort will serve as the first comprehensive plan update since the original KRMP was completed in 1974.

Lynda Roush,

Arcata Field Manager.

[FR Doc. 02-25924 Filed 10-10-02; 8:45 am]

BILLING CODE 4310-40-P

INTERNATIONAL TRADE COMMISSION

[Inv. No. 337-TA-450]

Certain Integrated Circuits, Processes for Making Same, and Products Containing Same; Notice of Final Determination and Issuance of Limited Exclusion Order

AGENCY: U.S. International Trade Commission.

ACTION: Notice.

SUMMARY: Notice is hereby given that the U.S. International Trade Commission has found a violation of section 337 of the Tariff Act of 1930 (19 U.S.C. 1337) as to one claim of one patent and has issued a limited exclusion order in the above-captioned investigation.

FOR FURTHER INFORMATION CONTACT:

Clara Kuehn, Esq., Office of the General Counsel, U.S. International Trade Commission, 500 E Street, SW., Washington, DC 20436, telephone 202-205-3012. Hearing-impaired persons are advised that information on this matter can be obtained by contacting the Commission's TDD terminal on 202-205-1810. General information concerning the Commission may also be obtained by accessing its Internet server (<http://www.usitc.gov>). Copies of the Commission order, the Commission opinion in support thereof, and all nonconfidential documents filed in connection with this investigation are or will be available for inspection during official business hours (8:45 a.m. to 5:15 p.m.) in the Office of the Secretary, U.S. International Trade Commission, 500 E Street, SW., Washington, DC 20436, telephone 202-205-2000.

SUPPLEMENTARY INFORMATION: The Commission instituted this investigation by notice published in the **Federal**

Register on March 6, 2001. 66 FR 13567 (2001). The complainants were United Microelectronics Corporation, Hsinchu City, Taiwan; UMC Group (USA), Sunnyvale, CA; and United Foundry Service, Inc., Hopewell Junction, NY. *Id.* The Commission named two respondents, Silicon Integrated Systems Corp., Hsinchu City, Taiwan, and Silicon Integrated Systems Corporation, Sunnyvale, CA (collectively, "SiS"). *Id.* The complaint, as supplemented, alleged violations of section 337 in the importation, the sale for importation, and the sale within the United States after importation of certain integrated circuits and products containing same by reason of infringement of claims 1, 2, and 8 of U.S. Letters Patent 5,559,352 ("the '352 patent") and claims 1, 3-16, and 19-21 of U.S. Letters Patent 6,117,345 ("the '345 patent"). *Id.* On November 2, 2001, the presiding administrative law judge ("ALJ") issued an initial determination ("ID") (ALJ Order No. 15) granting complainants' motion for summary determination on the issue of importation and denying respondents' motion for summary determination of lack of importation. That ID was not reviewed by the Commission. A tutorial session was held on November 5, 2001, and an evidentiary hearing was held from November 7, 2001, through November 16, 2001, and from December 10, 2001, through December 12, 2001. The ALJ issued his final ID on May 6, 2002, concluding that there was no violation of section 337. With respect to the '352 patent, the ALJ found that: Complainants have not established that the domestic industry requirement is met; none of respondents' accused devices infringe any asserted claim of the '352 patent literally or under the doctrine of equivalents; and claims 1 and 2 of the '352 patent are invalid as anticipated under 35 U.S.C. 102 and claim 8 of the '352 patent is invalid for obviousness under 35 U.S.C. 103. With respect to the '345 patent, the ALJ found each of the claims listed in the notice of investigation, *i.e.*, claims 1, 3-16, 19-20, and 21, invalid as anticipated by and made obvious by certain prior art. The ALJ stated that, in their post-hearing filings, complainants asserted only claims 1, 3-5, 9, 11-13, and 20-21 of the '345 patent against respondents. He found that, if valid, each of the asserted claims of the '345 patent, *i.e.*, claims 1, 3-5, 9, 11-13, and 20-21, is literally infringed by SiS's existing (or old) SiON manufacturing process, but that respondents' new N₂O process does not infringe any asserted claim of the '345 patent. The ALJ further found that a

BLM PUBLIC INPUT FLYER

BLM SEEKS PUBLIC INPUT

ON MANAGEMENT PLAN FOR

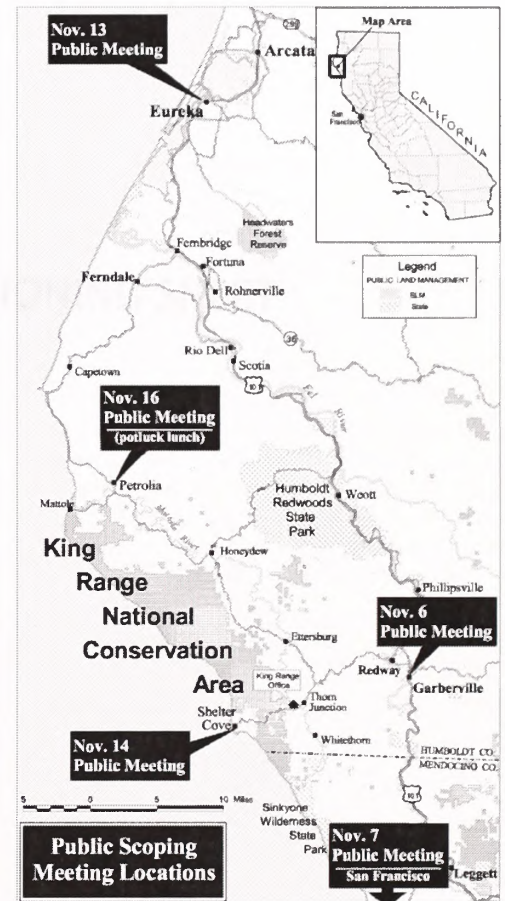
KING RANGE

NATIONAL CONSERVATION AREA (THE "LOST COAST")

Help the U.S. Bureau of Land Management (BLM) update the Management Plan for the King Range National Conservation Area (KRNCA). Extending 35 miles between the mouth of the Mattole River and the Sinkyone Wilderness State Park, the King Range National Conservation Area's rugged coastline, soaring cliffs and 63,000 acres of lush forests represent a rare back-country coastal environment – one of the last in the nation. This plan will direct management of the area for at least the next 20 years, and your ideas are key to shaping this future vision.

Help us kick off the planning process by attending one of our public scoping meetings. This first series of meetings will focus on developing a long-term vision for the future of the King Range NCA, as well as identify the spectrum of goals, concerns, ideas, problems and potential solutions that our communities may have.

Please choose the meeting time and place that's most convenient for you. To learn more about the plan or provide additional input, please call (707) 825-2368, or visit our website at www.ca.blm.gov/arcata/king_range.html



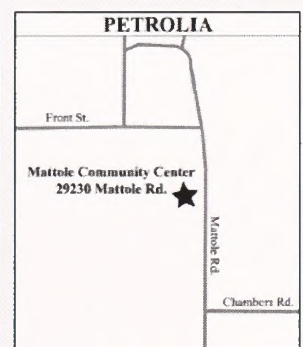
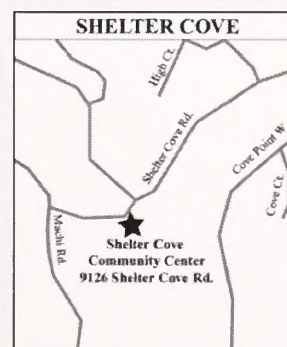
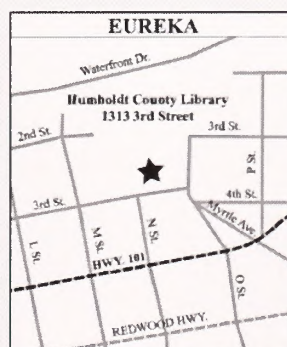
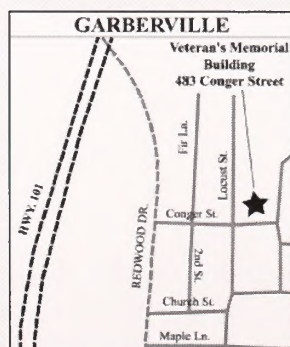
Wednesday
November 6th, 6-8 PM
Veterans Memorial Building
483 Conger St.
Garberville, CA

Thursday
November 7th, 6-8 PM
Fort Mason Center
Marina Room
San Francisco, CA

Wednesday
November 13th, 6-8 PM
Humboldt County Library
1313 3rd St.
Eureka, CA

Thursday
November 14th, 6-8 PM
Shelter Cove Community Center
9126 Shelter Cove Rd.
Shelter Cove, CA

Saturday
November 16th, 1-4 PM
Mattole Community Center
29230 Mattole Road
Petrolia, CA
This one will be a Potluck!



APPENDIX K

KING RANGE NEWSLETTER AND VISIONING SHEET

KING RANGE

NATIONAL CONSERVATION AREA

MANAGEMENT PLAN UPDATE OCTOBER 2002

A RANGE OF POSSIBILITIES PLANNING FOR THE FUTURE OF THE KING RANGE NCA

Greetings from the King Range!

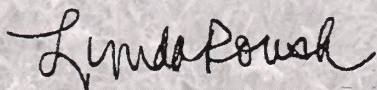
As fall settles on the Lost Coast, dusty roads become damp from the first rains of the season, fewer campers and hikers come to visit, and local residents begin preparing for winter. It's an ideal time to reflect on the past and plan for the future. The Bureau of Land Management is doing just that – in a big way – as we begin efforts to update the Management Plan for the King Range National Conservation Area.

We will use this plan to guide management and stewardship of King Range public lands for the next two decades. The original plan has been amended several times since its adoption in 1974, and over the years, new programs have been created to address changing environmental conditions, visitor demands and pressing needs. It is time to update the plan.

Updating the Management Plan offers both the BLM and the community a unique opportunity to produce a comprehensive long-range plan – one that will address current needs and guide us into the future. To create this blueprint for the area's future, we will listen to and work closely with the community, visitors and everyone who cares about the King Range. We cordially invite you to participate in this planning process. You can start by filling out the attached Visioning Worksheet and attending one of the Public Scoping Meetings in November (see inside).

Please share your ideas about ways we can improve the King Range National Conservation Area (NCA) and have a positive influence on neighboring communities and the larger region. During the past several years, the BLM has heard many concerns and ideas expressed by local community members and visitors about such topics as fire management, stream restoration, public access, improvements to visitor services and facilities, and the desire for more educational programs – just to name a few. We'll be exploring these and other ideas that are raised during this planning process.

So please join us in charting the future of this magnificent area and help preserve its legacy for future generations to enjoy. The range of possibilities is in your hands.



Lynda Roush
Arcata Field Manager
Bureau of Land Management



THEN AND NOW

Things have changed quite a bit since the King Range National Conservation Area Management Plan was first issued in 1974. The region's population has grown, its economic base has changed, and recreational use of the area has increased dramatically, placing more demands on the King Range than ever before.

For example, when the plan was written in 1974, Shelter Cove had about 30 homes and use on the Lost Coast Trail totaled less than 1,000 visitors annually. Now, in 2002, Shelter Cove has 450 houses – with over 50 new homes being built this year alone – and use on the Lost Coast Trail is expected to exceed 17,000 visitors.

Not only do we need to update the plan to address current conditions, we also need to craft a plan that can anticipate and adapt to future trends and changes for the next 20 years, while still preserving the King Range's unique characteristics. During this planning process, the BLM and the public will work together to create a vision for the King Range's future. What do you think the King Range should look like in 20 years? in 50 years? in 100 years? Once we define the vision, we must figure out how best to achieve it.



The Lost Coast of Northern California

THE KING RANGE AND ITS CONSERVATION

The King Range National Conservation Area offers visitors from all over the world the opportunity to experience over 35 miles of rugged coastline, soaring cliffs and more than 60,000 acres of lush forests in northern California's Humboldt and Mendocino counties. Extending between the mouth of the Mattole River in the north and the Sinkyone Wilderness State Park to the south, the region is known as the "Lost Coast" because the steep terrain, harsh weather, and unstable soils have naturally limited road building and development.

Its dramatic beauty and uniqueness prompted a group of local residents to propose special protection of the area. The U.S. Congress responded by passing the King Range National Conservation Area Act in 1970. The Bureau of Land Management (BLM), as part of the U.S. Department of the Interior, was assigned responsibility for acquiring and managing public lands within the designated conservation area. In 1974, BLM produced a Management Plan, describing policies, types of land uses, activities and programs that would be used to achieve the Act's objectives. This is the plan that we are now updating.

Today, the King Range remains one of the longest and rarest stretches of coastline in the country protected in a wild, primitive, natural condition. The area offers an array of public uses, including backpacking, car camping, wildlife viewing, hunting and scenic driving to name a few. While our basic mission remains the same – conserving the area's unique and primitive coastal environment – the plan update gives everybody a chance to review and improve the way we manage the range to achieve that goal. The plan update will help ensure that the King Range National Conservation Area remains a legacy for future generations to enjoy – just as all of us do today.



UPDATING THE PLAN – HOW THE PROCESS WORKS

The Management Plan is a guide for preserving and enjoying the King Range National Conservation Area – for today and for the future. The plan update will build upon the vision of the original plan and its evolution over the past three decades. The update process will also take into account the changes that have occurred in the area's environment, in the types of uses and numbers of visitors, and in neighboring Lost Coast communities.

The King Range NCA Management Plan, first adopted in 1974, has been amended previously to address a variety of issues:

- Transportation (1986)
- Wilderness area recommendations (1988, 1991)
- Fire management (1988)
- Visitor services (1992)
- Old growth forest species (Northwest Forest Plan 1994)
- Black Sands Beach closure to off-highway vehicles (1998)

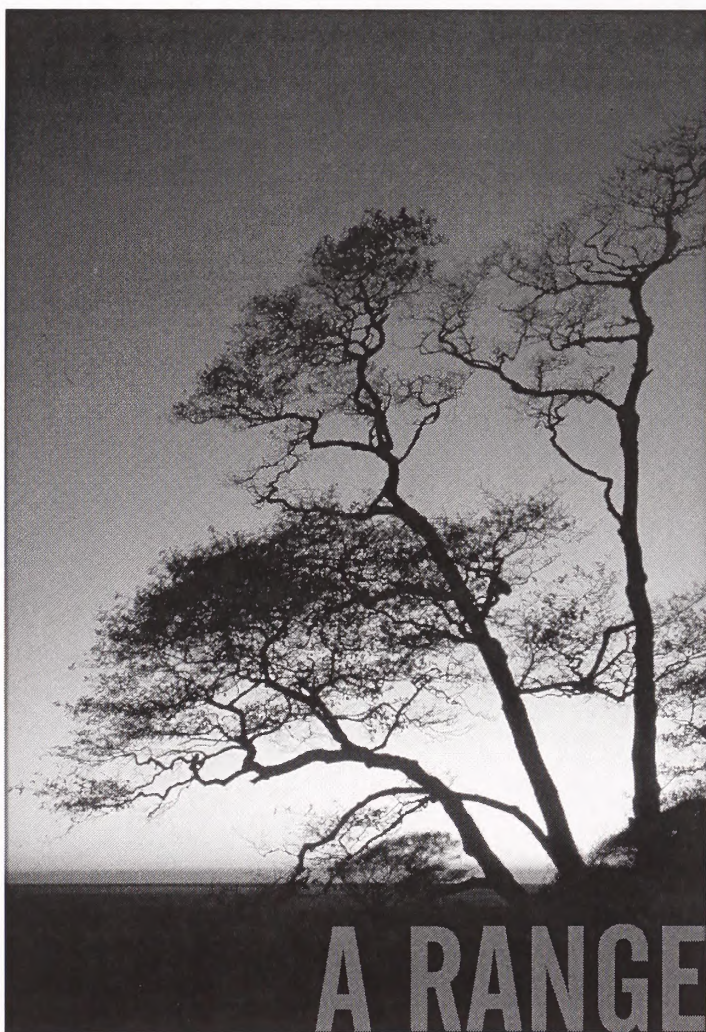
The existing plan provides a good foundation, and many of the management decisions and programs will be carried forward and integrated into the plan update. However, we want your ideas and suggestions about how we might best update the plan to meet current and future challenges and community priorities.

Some of the key topics that we have heard about from the public over the last several years include:

- visitation and tourism,
- balancing competing land uses,
- maintaining a sustainable environment while accommodating visitors and public uses,
- fire management,
- public access,
- working cooperatively with private property owners,
- economic opportunities,
- forest products gathering (mushrooms, beargrass, etc.),
- fish and wildlife habitat,
- watershed restoration, and
- water quality – just to name a few!

We'll be exploring these and other ideas that are raised during this planning process. It is important to identify key concerns and topics early, so they can be incorporated into the planning process and environmental analysis.

While updating the plan, we also will be guided by certain legal parameters, along with consideration of environmental and social conditions which will shape the area's future. Some of the laws that are relevant to our plan include the Endangered Species Act, National Environmental Policy Act, Clean Water Act, Federal Land Policy and Management Act, and National Historic Preservation Act. With this guidance, we will work together to determine which BLM management policies and practices are working well, and what improvements can best help to adjust the plan to address current conditions, community and visitor priorities, and future trends.



A RANGE

OF POSSIBILITIES

PARTNERS IN PLANNING - HOW YOU CAN GET INVOLVED

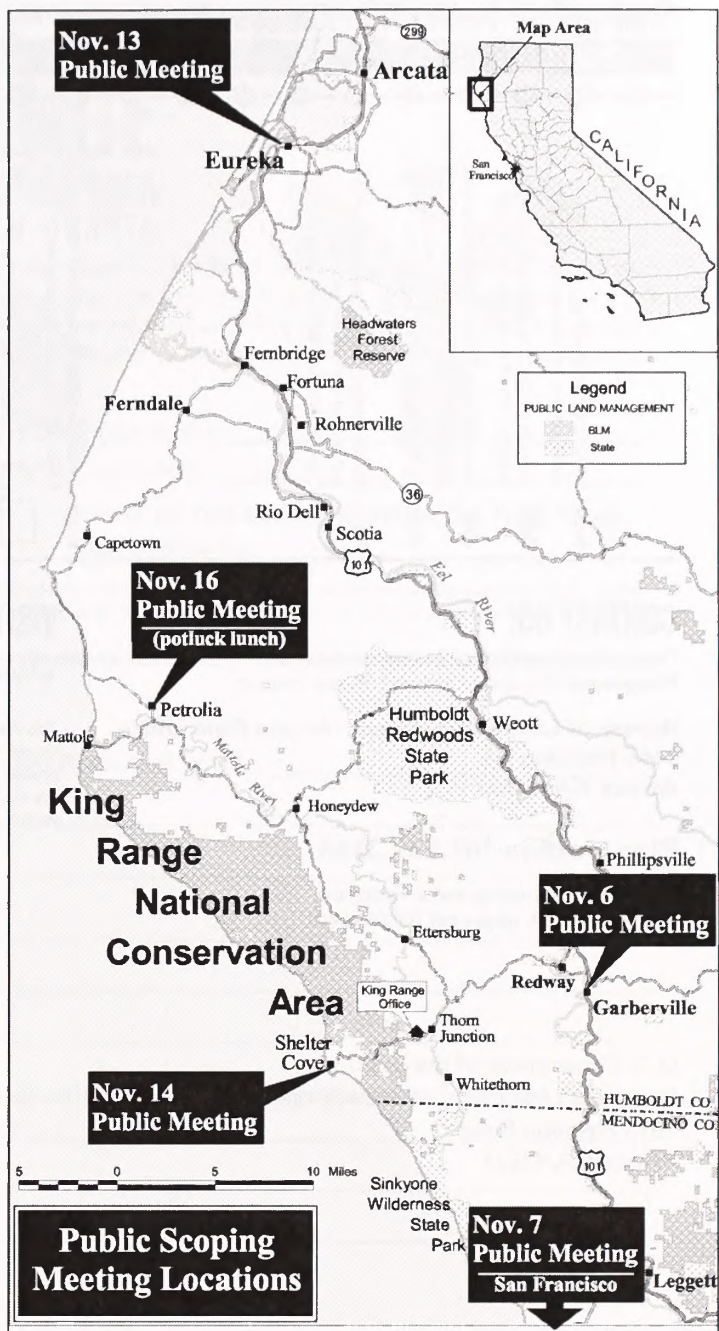
A great plan requires community involvement in the planning process. We want to hear from you. You can get involved in a number of ways.

- 1. Start by filling out the Visioning Worksheet and send it back to us by December 15, 2002.
- 2. Attend one of the public scoping meetings in November 2002.
- 3. Contact us by phone or via website anytime during the process.
- 4. Participate in workshops in the Winter and Spring 2003 to discuss specific topics and alternative approaches.
- 5. Give us your comments on the Draft Management Plan and Environmental Impact Statement – likely available for public review in Summer 2003. (An Environmental Impact Statement will be prepared along with the Management Plan update.)
- 6. Participate in the second set of public meetings – in Summer 2003 – to discuss the Draft Management Plan and Environmental Impact Statement. See timeline on back page.

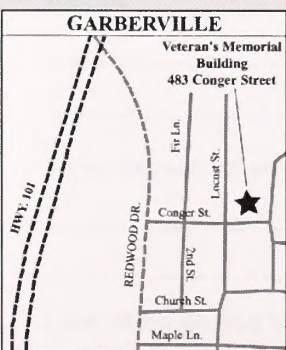
PUBLIC SCOPING MEETINGS KICK OFF THE PLANNING PROCESS
THE RANGE OF POSSIBILITIES BEGINS WITH YOU!

Help us kick off the planning process by attending one of the public scoping meetings. This first set of meetings will focus on developing a long-range vision for the future of the King Range NCA, as well as flesh out the spectrum of goals, concerns, ideas, problems and potential solutions that people have.

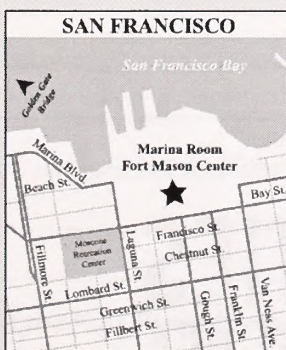
See the maps to find the time and place that's most convenient for you. If you can't attend one of these meetings, you can still share your ideas by filling out the Visioning Worksheet and/or contacting us by phone or on our website.



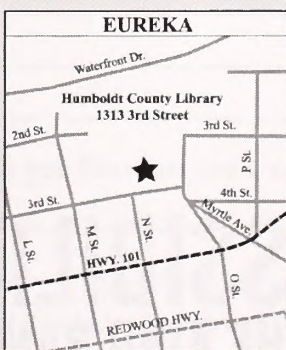
Wednesday
November 6th, 6-8 PM
Veterans Memorial Building
483 Conger St.
Garberville, CA



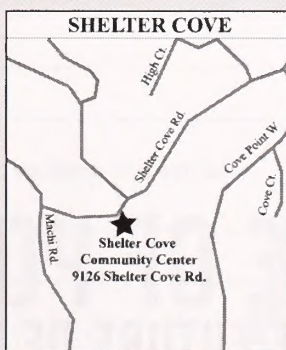
Thursday
November 7th, 6-8 PM
Fort Mason Center
Marina Room
San Francisco, CA



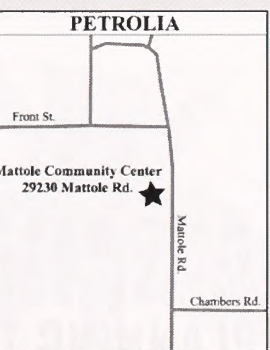
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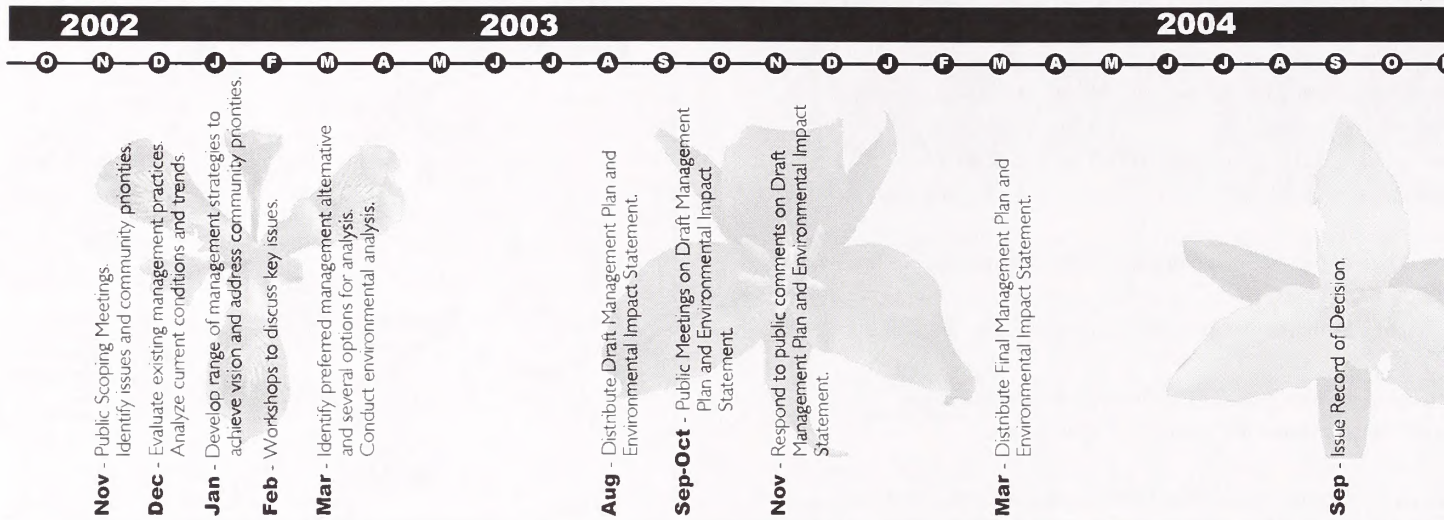


Saturday
November 16th, 1-4 PM
Mattole Community Center
29230 Mattole Road
Petrolia, CA
This one will be a Potluck!



TIMELINE OF PLANNING PROCESS

Dates are subject to change.



CONTACT US!

Do you have questions or comments about the Management Plan update process? Please contact:

Bureau of Land Management - Arcata Field Office
1695 Heindon Rd.
Arcata, CA 95521

Plan Hotline 707.825.2368

For general information about visiting the King Range NCA, please call 707.986.5400

VISIT OUR WEBSITE!

www.ca.blm.gov/arcata/king_range.html

You may also obtain progress information and submit your comments via our website. To receive future news about the King Range planning process, please write, call or contact us via the website to be added to the mailing list. (If you received this Planning Update through the mail, you're already on our list and don't need to sign up.)



Photography by Bob V.
 Design by

EDAW

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U. S. Department of the Interior
 Bureau of Land Management - Arcata Field Office
 1695 Heindon Road
 Arcata, CA 95521

A RANGE OF POSSIBILITIES
PLANNING THE FUTURE OF THE KING RANGE NCA

KING RANGE

NATIONAL CONSERVATION AREA

MANAGEMENT PLAN UPDATE

Before diving into the nuts and bolts of the planning process, we want to develop a broad "vision" for the future of the King Range National Conservation Area that reflects the values of the community – the people who live here, who visit and who care about the King Range. The Plan will guide the area's management practices for the next 20 years, so we need a clear understanding of where we are going and what we want to accomplish. Please take a few minutes to fill out this brief worksheet to help us develop a vision for the King Range National Conservation Area. You may add more pages if you wish. Please return by December 15, 2002.

NAME: _____ PHONE (optional): _____

ORGANIZATION (if any): _____ EMAIL (optional): _____

ADDRESS: _____

☐ Please do not add my name to the King Range Plan mailing list.

If you wish to withhold your name or street address from public review or from disclosure under the Freedom of Information Act, you must state this prominently at the beginning of your written comment. Such requests will be honored to the extent allowed by law. All submissions from organizations and businesses, and from individuals identifying themselves as representatives or officials of organizations or businesses, may be available for public inspection in their entirety.

A VISION FOR THE KING RANGE

What do you value most about the King Range National Conservation Area, and why? _____

What changes would you like to see? _____

What is your vision for the future of the King Range National Conservation Area? What do you want it to look like in 20 years? Or even in 50 years when our grandchildren come here? _____

ENVIRONMENT

What are your key concerns about the environment within the King Range? Please be specific. _____

VISITOR SERVICES

What improvements should be made to better accommodate visitors (e.g., campgrounds, trails, etc.)? Please be specific. _____

What aspects of visitor services and facilities do you like most and want to keep the same? _____

How often do you visit the King Range National Conservation Area?

_____ several times a year _____ once a year _____ once every few years _____ I've never visited

The King Range National Conservation Area is part of the fabric of the surrounding communities. It is tied into the local economies, recreational activities, culture and social activities of its neighbors.

If you live near the King Range NCA, please let us know . . . what are the greatest benefits of living near the King Range NCA?

What is the greatest drawback?

What could be done to improve the King Range NCA's effects on surrounding communities (e.g., the local economy, tourism, traffic, etc.)? Please be specific. _____

Is there anything else you would like to share with us? (attach additional sheets if needed)

Thank you! Please return by December 15, 2002.

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Bob Wick, Plan Coordinator
Bureau of Land Management –Arcata Field Office
1695 Heindon Rd.
Arcata, CA 95521

KING RANGE

NATIONAL CONSERVATION AREA

MANAGEMENT PLAN UPDATE

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OFFICE	DATE RETURNED

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ID: 88058391
King Range National
Conservation Area draft

